GAS

ENGINEERING • UTILIZATION • LOAD-BUILDING • MANAGEMENT

ROBERTSHAW'S RADIO CAMPAIGN PROMOTES FOOD AND FUEL CONSERVATION

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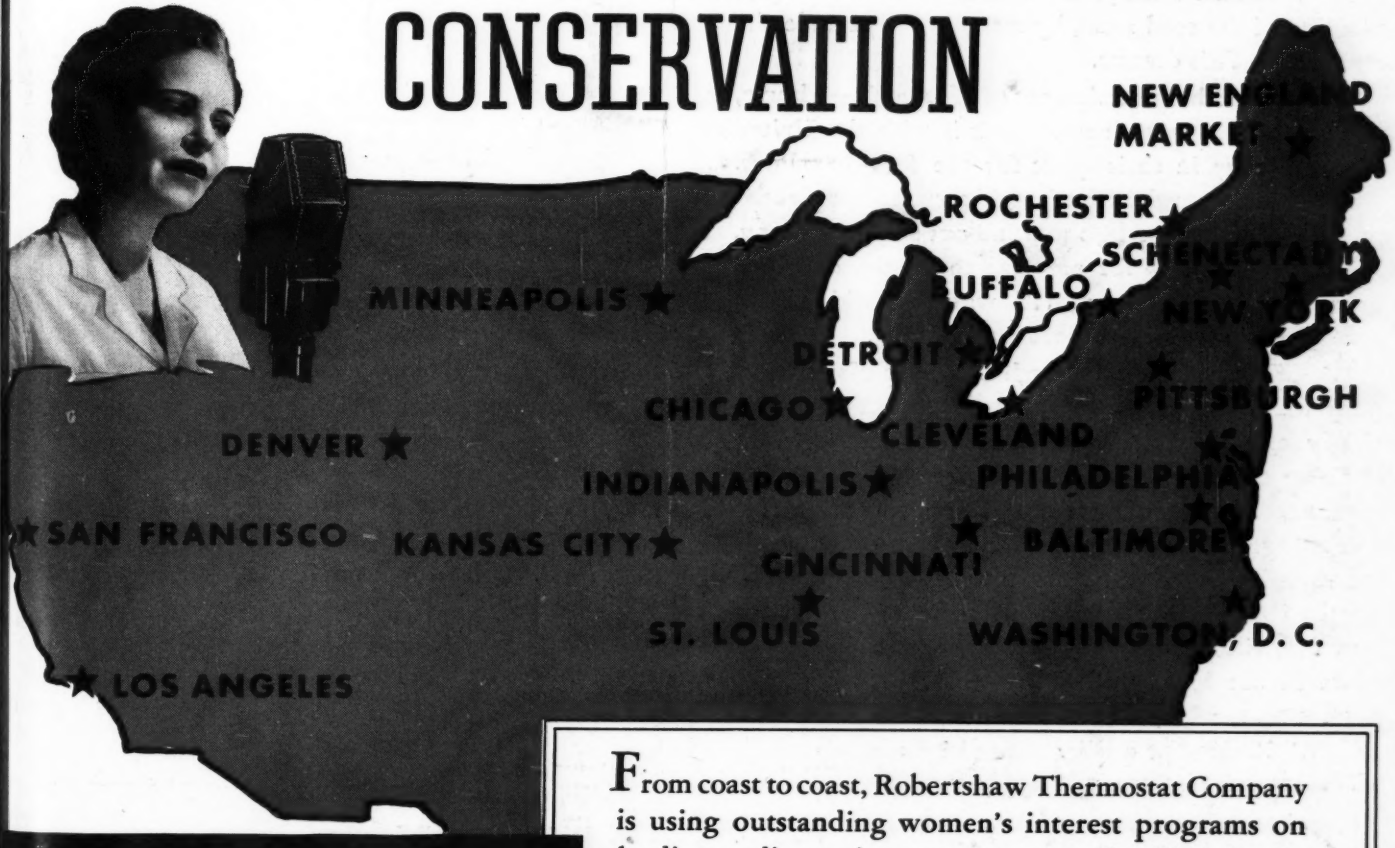


ROBERTSHAW THERMOSTAT COMPANY
YOUNGWOOD, PENNSYLVANIA

From coast to coast, Robertshaw Thermostat Company is using outstanding women's interest programs on leading radio stations as a means of telling homemakers how the correct use of an oven heat control can help conserve fuel and prevent needless waste of food.

As a by-product of this educational campaign, millions of prospective range buyers are learning the advantages of choosing a Robertshaw-equipped range — when new ranges are again available.

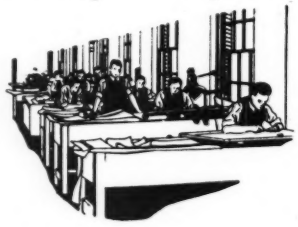
The Seed of Today is the Tree of Tomorrow

HE who has longed for the cool shade of a mighty oak in his front lawn, or for a row of productive fruit trees in the back yard—this man knows that the planting of the seed must, by many years, precede the fulfillment of his dreams.

So it is with the attainment of life's goals—a home, position and independence. So it is with the United Nations today in their quest for the four Freedoms. The seed for a sturdy tree of world security was planted the day we and our Allies went all-out against tyranny. It has taken a while for our tree to mature and bear fruit, but because we moved when we did we are assured of success in the eventual victory.

While we in the Pittsburgh Equitable Meter Company and Merco Nordstrom Valve Company are now chiefly engaged in the production of materials for winning this war, we are also energetically planning for the future. The Research, Engineering and Development programs of our organization are being intensified. New designs are taking form on the drawing boards. Experiments with new materials and new models are taking place in the laboratories. Our Standards Department, which was recently awarded the "A" Rating for quality control by the U. S. Army Air Forces, will apply exacting precision over the manufacturing procedure in our products of tomorrow.

With the coming of world peace, our five factories will resume their principal role of building accurate and dependable meters, valves, regulators and similar items for measurement and control. As manufacturers of precision equipment, we expect the educated post-war buyer to demand and recognize only the highest quality and serviceability. In the end, the harvest of the seeds that we are sowing today will be garnered by the equipment users of tomorrow.



FROM TODAY'S RESEARCH AND PLANNING WILL COME OUR PRODUCTS OF TOMORROW

PITTSBURGH EQUITABLE METER COMPANY

MERCO NORDSTROM VALVE COMPANY

Main Offices, Pittsburgh, Pa

BOSTON · BROOKLYN · BUFFALO · CHICAGO · COLUMBIA · HOUSTON · KANSAS CITY · LOS ANGELES · MEMPHIS · NEW YORK · PITTSBURGH · SAN FRANCISCO · SEATTLE · TULSA

NATIONAL METER DIVISION, Brooklyn, N Y

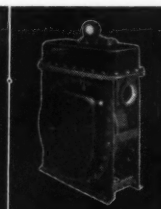
BACK THE ATTACK WITH WAR BONDS

EMCO METERS AND REGULATORS

EMCO Standard Domestic Meter

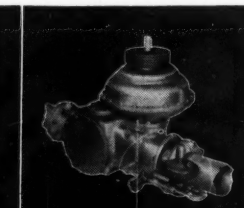
EMCO Tin Meter for Domestic Service

EMCO No. 4 Meter with EMCORECTOR

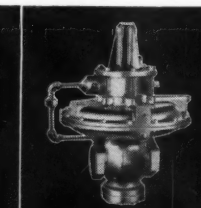


EMCO Large Capacity Pressed Steel Meter

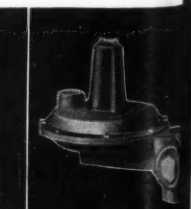
EMCO Balanced Valve Pilot Loaded Regulator



EMCO Balanced Valve Regulator with EMCOLOADER



EMCO "1001" Regulator Standard Type



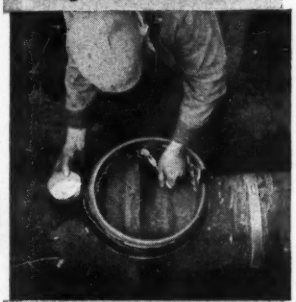
EMCO Type "B" Ejector Regulator

REPAIR and MAINTENANCE

IMPORTANCE RECOGNIZED BY GOVERNMENT!

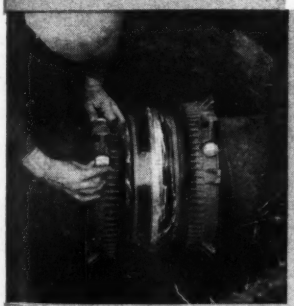
Maintenance of uninterrupted service is just as important as the manufacture of munitions. Recognizing this, the government has allowed us enough material so that we can, in most cases, make immediate shipment under good ratings.

Clean pipe thoroughly — then center brass band over break, bending tab back to lock.

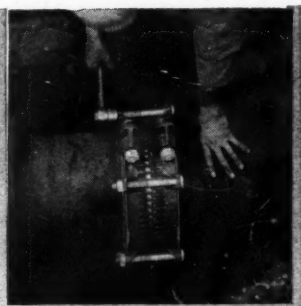


Thoroughly soap both sides of gasket and pipe with heavy soap water.

Center gasket and Monel Band over brass band.



Assemble halves of clamp over pipe and bolt together.



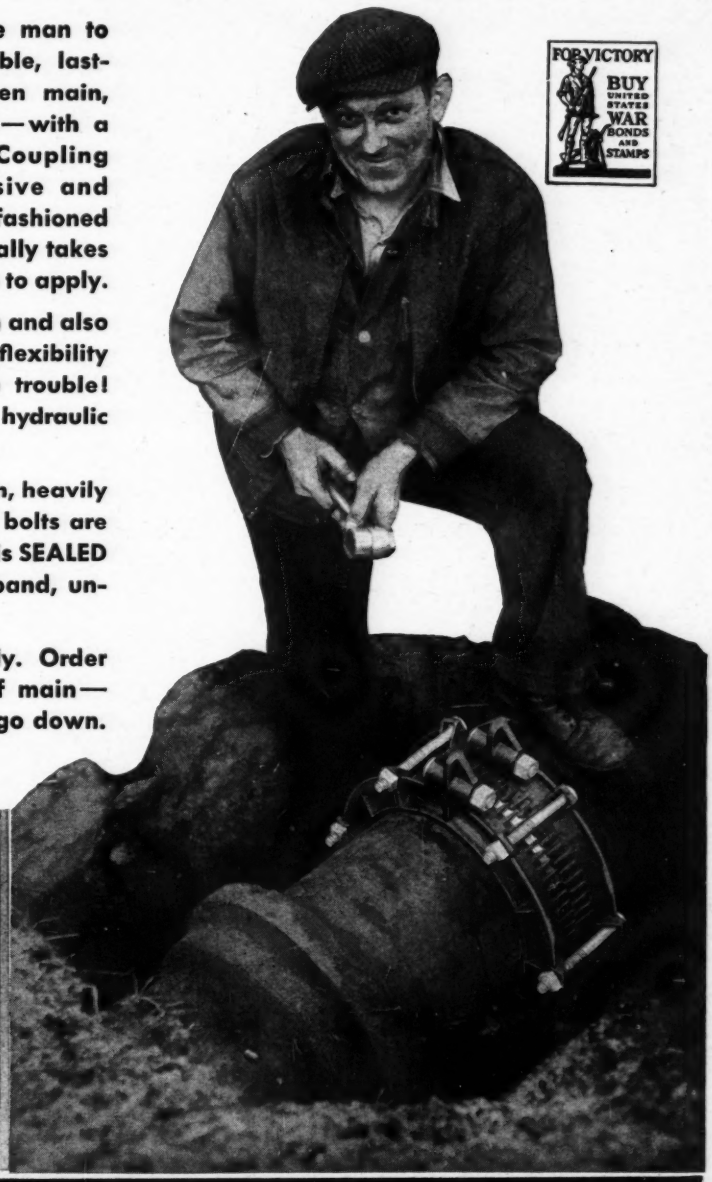
Insert pull bolts and tighten all around evenly.

● **IT'S EASY** for one man to make a dependable, lasting repair of a broken main, in 15 minutes or less — with a **SKINNER-SEAL** Split Coupling Clamp! Less expensive and lighter than the old-fashioned split sleeve, which usually takes 2 or 3 men 3 or 4 hours to apply.

Splices the broken main and also provides a degree of flexibility which prevents future trouble! Easily passes 600 lb hydraulic pressure test!

Made of malleable iron, heavily enameled. Sturdy steel bolts are electro-plated. Gasket is SEALED by Monel Metal Seal band, under pressure of rings.

Thousands used yearly. Order today for each size of main — watch repair expense go down.



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Nineteenth Year of Publication

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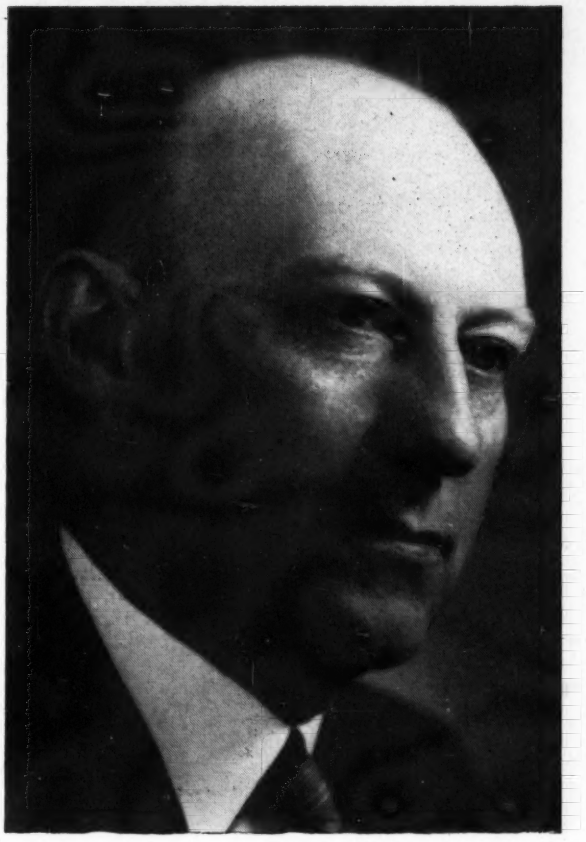


GUEST EDITORIAL

Post-War Action

By E. P. NOPPEL

Ebasco Services, Incorporated, New York, N. Y.

WE HEAR much of post-war planning. Ideas are as varied as the people who propound them. However, one thing is certain. If planning now is to result in effective action after the war, all business enterprises, large and small, will have to do their share. Private enterprise has a big responsibility.

The war has wrought many changes in the lives and habits of people. Millions have been called in the armed forces; other millions mobilized on the home front.

On the one hand we have curtailed production of civilian goods while on the other we are exerting an all-out effort for production of materials for war. Production is paramount. Costs and economics are secondary. To keep pace with and exceed the production of our enemies, this viewpoint is essential.

All of these things create a dislocation which is felt throughout the world and under the stress of war it is difficult to think in terms of peace. And yet, without relaxing in the all-out effort to win the war, we must prepare for the transition to peace. The war may end when we least expect it and when we are least prepared for the task of conversion which will be as great as the transition from peace to war. The effect may be more severe, once the war ends, because the change will be more abrupt.

If we were to sum up, possibly over-simplify, the ultimate goal of our post-war planning, it would be merely this—to maintain a high level of peacetime employment and production in private enterprise. This is quite different from trying to accomplish the same thing under wartime conditions. Costs and sound economics will be of increased importance. New products, new methods, broader markets will have to be developed.

In the tremendous expansion of industrial activity for war, the Government through financing and ownership has moved into industry on a large scale. In round figures the investment of government in industrial plants and allied facilities is reported to be approximately 15 billion dollars. The magnitude of this venture is apparent when we consider that this amount is about three times the investment of private capital in the manufactured and natural gas industry in the United States.

The gas industry is fortunate in having an alert and capable group working on problems involved in this task of conversion to peace, through the Post-War Planning Commitee of the AGA. However, as the Chairman of the Committee for Economic Department recently stated:

> "Individual enterprises must start now to plan their own post-war products and markets."

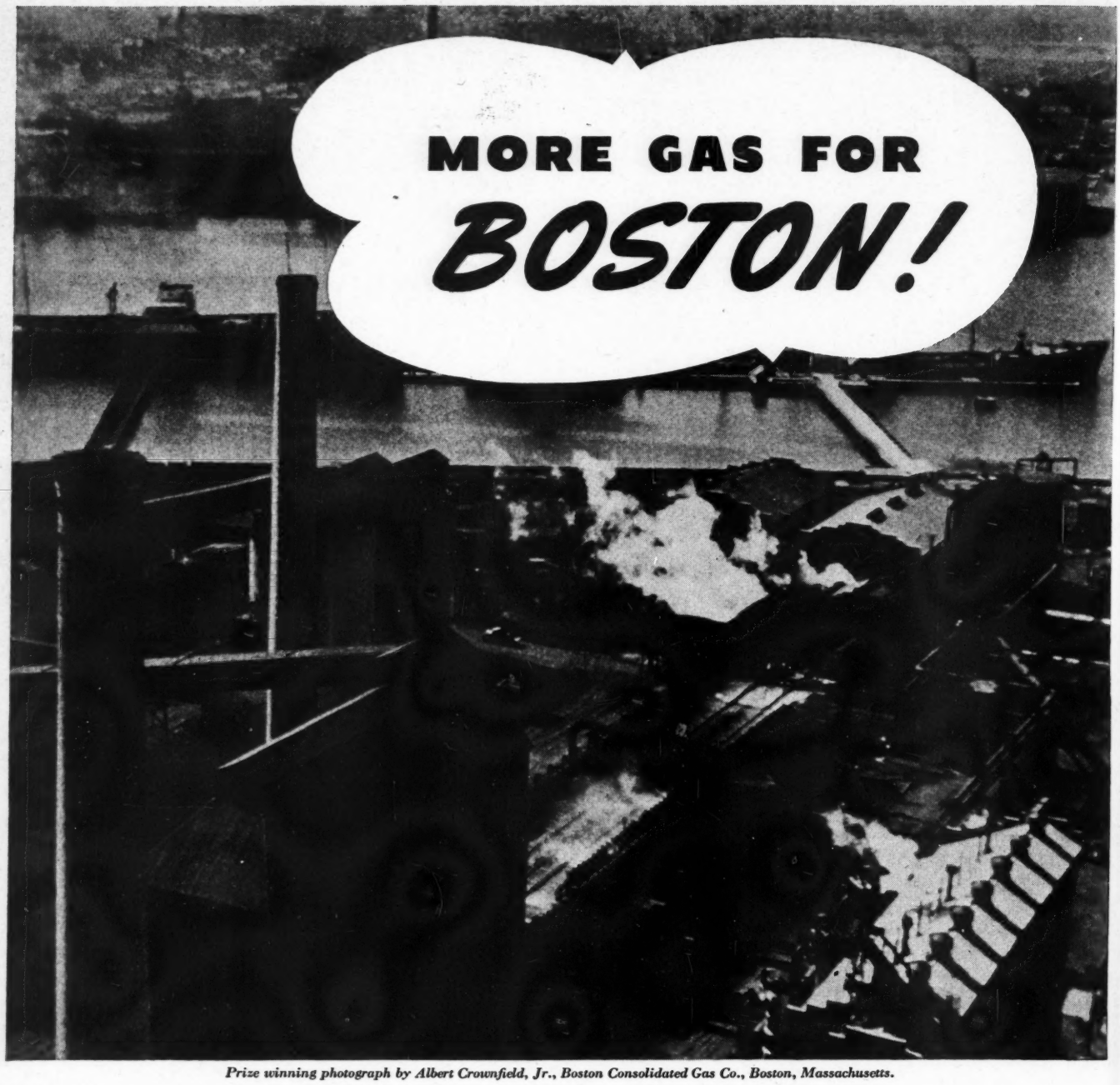
So must each individual company and manufacturer in the gas industry give consideration now to the part he may play in the conversion to peace.

Industry committees can do much in studying and making available information covering various fundamental problems, but it is beyond the ability of any agency—public or private—to lay out a blueprint covering plans for our future national economic and business program which could be carried out effectively. One of our greatest resources is the individual initiative and enterprise of those who make up our industrial and business organizations.

Preparing for post-war action may result in taking on additional operating expenses. It will require working in large part and reaching decisions based upon estimates and assumptions rather than facts which in these difficult times cannot be determined with any great degree of clarity.

Among the various developments under study by the industry as part of its post-war planning, one which gives promise, is the use of gas for air conditioning. During the past decade a large amount of experimental and development work has been done. There are hundreds of installations of various types in operation. I know of two natural gas companies which have a total of 170 installations, aggregating 4500 tons of capacity, ranging in size from three tons to over 1000 tons on both company and customers' premises utilizing gas for air conditioning in one way or another. Equipment has already been developed and will be ready for the market when materials are released for its production. Additional equipment is in the process of development. All of the manufacturers engaged in this activity should have the active support of the industry.

To many of us who have been associated with this activity over a period of years, the use of gas for air conditioning does not seem like such a new thing. However, to our customers the idea of "year-round comfort" is still relatively new and they will buy equipment for this purpose in increasing amounts as designs are (*Turn to page* 22)



Prize winning photograph by Albert Crownfield, Jr., Boston Consolidated Gas Co., Boston, Massachusetts.

IN BOSTON . . . Frisco . . . or Kokomo, in every city in the country, the Gas Industry has been called upon to devote all out effort for the production of its crucial product. In face of the terrific demand of war industries . . . and domestic needs, every requirement has been met.

With operating conditions as they are today . . . 48 hours' production crammed into every 24, new purification problems have arisen. Connelly engineers, working hand in hand with the Industry's leading technicians, have found new methods for utilizing purification materials which meet today's special demands.

Connelly has been supplying the Gas Industry with purification materials for more than 67 years. Their vast accumulation of field data and experience in this line is at the disposal of the Industry. Consult Connelly for purification. There is no obligation.

Connelly IRON SPONGE

CONNELLY IRON SPONGE & GOVERNOR CO.

CHICAGO, ILL. ★ ELIZABETH, N. J.

THERMALLY THINKING

By ELLIOTT TAYLOR

Washington Editor

Home Service

Being congenitally disinclined to mix business with breakfast we were much of a mind to miss the home service breakfast at the St. Louis Convention, an error of slothfulness, we hasten to add, that we did not commit. We were impressed most of all by this single fact, that home service has risen from a minor luxury department in executive estimation to its present high standing as one and often the only avenue of contact with the consuming public under war manpower restrictions. These women of the gas industry are today much more than mere kitchen consultants; they are experts on nutrition, on food conservation and on practical canning, preserving and dehydration methods. Their traditional role of goodwill emissaries between the industry and its customers has been enhanced by the essential service that they are rendering to American homes. Aptly President Arthur F. Bridge evaluated their service to gas when he said: "Certainly no other representatives of the industry have contributed more to community life and national welfare under wartime conditions."

Holley Poe

A feeling of grave concern over its position in official Washington was the natural gas industry's first reaction to the news, released the middle of October, that Holley Poe had resigned as director of the Natural Gas and Natural Gasoline Division of PAW to accept the post of executive vice-president and general manager of the Petroleum Reserves Corp. Gas men were mindful of the fact that in the short period of a year and a quarter since the division was organized by its first director there had been a marked reduction in the stream of irksome orders coming out of Washington, and in their stead had been substituted a spirit of adult cooperation that spread beyond the confines of PAW into WPB and other Washington agencies, with the possible exception of the truculent and mysterious OPA.

It was, thanks to his knowledge of the industry, and particularly to his ability to surround himself with competent and self-sacrificing assistants, that natural gas, natural gasoline and liquefied petroleum gas were able to establish for themselves individual identities each demanding separate consideration and separate treatment from the other branches of both the petroleum and the gas industries. Undoubtedly he took to Washington a viewpoint colored by his years of association with public utilities. But it was a viewpoint that even before Pearl Harbor took into consideration the temper of the times, and that had repeatedly found expression in urging executives to prepare for the closer coordination of industry and national effort that subsequent events made imperative.

In the national capital, where too often imprecations and condemnation have become the shabby synonyms of strength and determination, and where confusion twice confounded is somehow mistaken for accomplishment, he has built and maintained a cooperative atmosphere with an efficient organization that functions without internal friction or external venom.

No better proof of the soudness of his organizational structure could be found than in the fact that as his office was vacated, it was immediately filled by the appointment of his assistant, James E. Pew, to the position of director of the division, with others down the line all moving up into the places that had been immediately above them; Robert W. Ducker to assistant director, B. C. Adams to chief of the natural gas section.

As was their former director, every newly advanced member of the natural gas and natural gasoline staff is an industry man, familiar and sympathetic with industry problems. Every one is without personal political ambitions, as anxious to have the war over with as any buck private in a south Pacific foxhole, and we are convinced that they will continue to labor intelligently and objectively toward that end alone.

Momentarily it must be considered that the industry's loss in the selection of Holley Poe for newer and greater responsibilities is the nation's gain. But his return to a position of service in the interests of natural gas is, in our opinion, as imperative as it is inevitable.

Appliance Design

Having clung for years to the old fashioned and sentimental belief that a gas range should look like a gas range, and that it should be arranged so that it would be easy to cook on, we were heartened to have F. X. Mettenet, vice president of The Peoples Gas Light and Coke Co., Chicago, disclose that Chicago and other Illinois housewives have expressed a preference in which 53% of them want their new range to have a medium or a high oven. In discussing the Chicago findings, William Potter, of Elizabethtown, N. J., advised that in a similar survey conducted over the New Jersey system, the preference figures were in just about the same proportions as those for Illinois. Further light will be shed on this question of appliance design when a questionnaire being sent out by the AGA Post War Planing Committee has been returned and tabulated. Before making any general recommendations to appliance manufacturers, the committee aspires to have in its hands opinions representing at least 70% of the meters of the industry. We believe that information of this kind can be of great practical value to manufacturers, worth considerably more than the dream world economic kibitzing that is sometimes passed their way.

Advertising

Proponents of the dream world slant, which is gently suffusing the current advertising campaign of the American Gas Association, are inclined to defend their position on the grounds that a wholly inadequate support of national advertising on the part of the industry makes necessary a very limited campaign, and that to make that campaign even reasonably effective it had to be highly imaginative, even to the point of the fantastic.

Every advertising agency copy writer knows that part of his job is to keep the client sold. And while there have been instances in which this expedient has so far dwarfed the main purpose of the campaign as to render it practically valueless, the necessity for keeping the client enthusiastic is never overlooked.

But if it is true, and it certainly seems to be true, that gas

industry support of advertising runs far short of that required to make an effective showing against the gaudy presentation of competitive fuels, does it necessarily follow that that is because industry executives are too reactionary, too shortsighted to see the value of a big and arresting campaign, or has somebody just failed to keep the client enthusiastic?

Frank Smith, president of the Houston Natural Gas Co., told the AGA convention: "It is of great concern to me that, at a time when the gas industry is facing . . . the most momentous and difficult problems of more than a century and a quarter, the support for its national advertising has waned." The reason for that waning support in the opinion of Mr. Smith can be laid to the fact that in advertising matters the industry has set its sights too low. "Instead of half a million dollars our sights might better have been set on the $4 million fund," are his words; and "Advertising to reach the 900,000 who will buy or start building a home within six months after peace comes . . . is not going to be reached by any 4c a meter fund."

On the assumption that one and a half million gas ranges will be sold during the first 12 months following the lifting of manufacturing and selling restrictions, he proposes that $2 a unit be added to the invoice cost of each range, and passed on to the consumer, bringing in a total of $3 million earmarked for national advertising. Another $800,000 might be raised by the same procedure on the sale of water heaters, with $1 added to the cost of each heater sold; and gas heating appliances should be good for an additional $200,000, bringing the possible total up to $4 million.

Testing whether such a campaign would be accepted by the gas appliance dealers and the plumbers who sell automatic water heaters, inquiries were made in selected towns on the Houston Natural system. Signed endorsements of such a campaign were secured from dealers representing a normal total of 17,500 gas range sales per year, a fund of $35,000 from just one small territory that could be remitted to a truly representative national advertising campaign sponsored by the AGA. The Texas association of master plumbers likewise endorsed the proposed $1 per automatic water heater, for the same purpose, which Mr. Smith estimates would be good for another $35,000.

It is true that no sizable campaign could be financed on the basis of the number of ranges, water heaters and other gas appliances that are being sold now. But manufacturers of this equipment are for the most part planning to get back into their normal production as soon as conditions permit, and nobody has ever claimed that they would not be able to hypothecate future sales to the extent of an immediate participation in an advertising program, providing that program had what it takes to capture the imagination and arouse the enthusiasm of the industry.

Gas appliance manufacturers have come to realize in recent months that even with the most highly thought of product, out of sight is out of mind, and many of them are taking steps through increased advertising to reestablish the potency of a name that further neglect might spell doom to commercial oblivion. The CP range advertising appropriation has been stepped up from $10,000 to $30,000 for the coming year. It is true that this is only a small drop in a very large bucket, but it is indicative of the upward trend that advertising thought is taking today. Stove manufacturers who supported the campaign in its lush days realize that they have too much invested in the name CP to allow it to join Arbuckle coffee and Sweet Caporal cigarettes in the limbo of forgotten things.

The amount that could be raised from manufacturers it would not be within our province to predict, but we do believe that it could be made a sizable contribution even under present day restrictions if the gas utilities as such were to show the manufacturers a workable program for what Frank Adams, chairman of the Post-War Planning Committee of AGAEM, calls the necessary "customer conditioning" that has to be done today.

As an evidence of utility good faith and cooperation it should be possible to further enlarge the fund available for advertising by raising the utility contribution to 5c a meter at least, setting a goal of no less than 18 million meters participating. It has further been suggested that still another $100,000 could be invested in the enterprise by various natural gas pipe line companies, swelling the gas industries share of the total to at least $1 million.

We envision the possibility of this immediate fund being spent, not in that "magic new world" of tomorrow that the creators of the current campaign are dreaming of, but in the tough old world of today that every business enterprise is living in.

The parting admonition of Frank Smith of Houston in his AGA address might just as well be our own: "Let the national advertising committee of AGA set as its goal the amount required, and then proceed to achieve it."

Tax Relief

Sketching in briefly the high points of the general war picture, as of today, J. A. Krug, head of WPB's OWU, again complimented the entire industry on the manner in which it has cooperated with government to fulfill its wartime obligations, observing that, "Thanks to the industry, gas has its assignments well in hand." This we believe is true, but we also believe that right now the industry needs something more from OWU than just a patronizing pat on the head. A group of natural gas companies are petitioning for relief from the inequities of the excess profits taxes as they apply to this, a natural resource industry. Unless the tax law is modified it will not be a question merely of injustice to an industry, which government agencies are little concerned with, it will be a question of impairing the natural gas industry's ability to continue as an effective indispensable tool on the production front. Nobody is threatening that natural gas will lie down on the job, but if the time comes when further extensions of gathering lines, additions of compressor stations and new drillings are necessary, and the industry does not have or cannot obtain the funds to carry on, the deliverable supply of natural gas will fall off. Not to protect or preserve the natural gas industry for its own sake, but to safeguard the uninterrupted delivery of a vital fuel, OWU should dispatch at once to the Ways and Means Committee of Congress a memorandum on its official views regarding the remedial legislation that is now under consideration.

Guest Editorial (continued)

improved and costs are brought down with the broadening of the market. This has been the history of practically every new convenience offered to the public, from refrigerators to automobiles. In so far as summer cooling is concerned, the residential market is practically untouched. As more people enjoy this convenience in their stores, offices and factories, they will demand it in their homes.

Public acceptance of equipment, using gas for "year-round comfort," must be created if sales are to be developed. This is a job to be done by the gas industry, in which many companies can take part and bring a valuable new gas service to the public, new revenues to the gas industry, and provide new employment in the production, sale and installation of the equipment.

CONTRACTS LET, CONSTRUCTION STARTS

On Tennessee Gas and Transmission Co. Pipe Line

PROBABLY THE most important single event in recent years affecting the growth and development of the natural gas industry occurred on Sept. 25 when the Federal Power Commission gave the go-ahead signal for the construction of a long distance pipeline to the Atlantic Seaboard area. The line is to be constructed beginning right now on a hurry-up schedule to make certain that the war effort will not be impeded through any lack of natural gas in the Appalachian area during the winter of 1944. Essential facts concerning the line, which is to be built by Tennessee Gas and Transmission Co., were presented in the October issue of GAS, page 48. The article herewith published is an extension of those facts.—Editor.

PIPELINE construction contracts have been let and first deliveries of pipe for the 1228-mile Tennessee Gas and Transmission Co. "Big Inch" natural gas line from near Corpus Christi, Texas, to Cornwell, West Virginia, are scheduled to begin in December.

Plans calls for the construction of eight compressor stations. The project is expected to be completed in time to handle the gas demands in the Appalachian area during the winter of 1944. FPC issued a certificate of public convenience and necessity Sept. 25. The line will deliver 300,000,000 cu. ft. of gas per day at 750 lbs. pressure.

Officials: President of Tennessee Gas and Transmission is Gardiner Symonds, who replaces Curtiss B. Dall, former son-in-law of FDR. Symonds was formerly an oil industry executive. Vice-president and general manager of the company is Ray Fish, who was formerly with the Stearns-Rogers Mfg. Co. of Denver. Tennessee Gas has established offices on the fifth and sixth floors of the National Standard Bldg. in Houston.

Contractors: Contractors for the pipeline construction were selected early in November as follows:

1. Williams Brothers Corp.—Corpus Christi to Edna, Texas, approximately 120 miles.

2. N. A. Saigh Co.—Edna, Texas, to Cleveland, Texas, approximately 120 miles.

3. O. C. Whitaker — Cleveland to the Saline River Crossing, approximately 120 miles.

4. The balance of the line is divided between Williams Bros. and Bechtol-Dempsey-Price, with the latter firm having the eastern section.

5. Contract for the construction of the eight compressor plants has been awarded to Stearns-Rogers Manufacturing Co. of Denver with Henry Wade in charge. Orders have been placed for 31 1000-hp. Cooper-Bessemer units and 27 1000-hp. Worthington units. The plants will be spaced at approximately 200-mile intervals. A dehydrating plant, also to be constructed by Stearns-Rogers, will be located at the west end of the line. Stearns-Rogers has established offices in the Second National Bank Bldg., Houston.

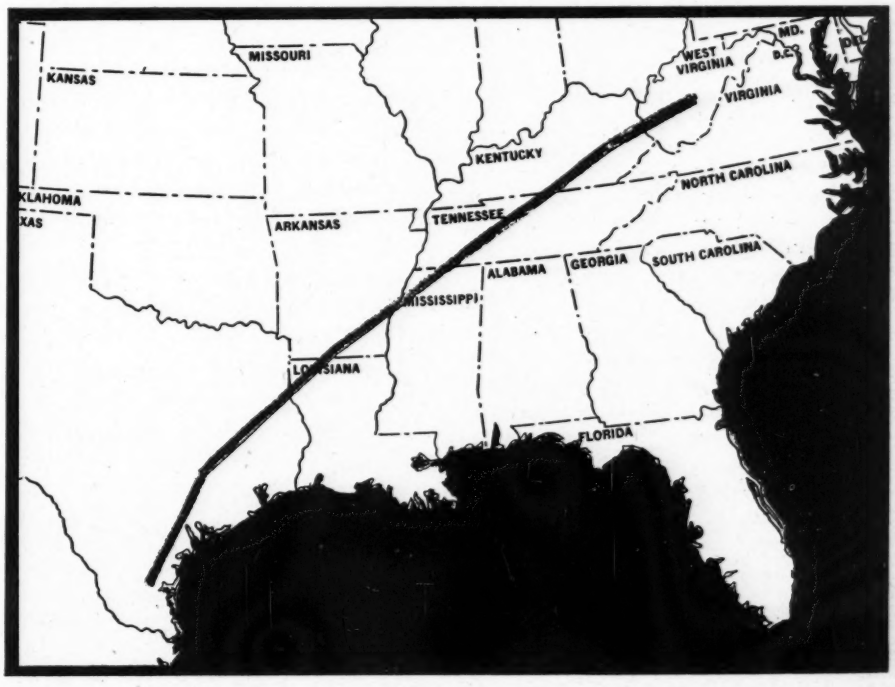
The Cooper-Bessemer units will be their GMV-10 300 rpm. 2-cycle model which has a 14x14 bore and stroke. This unit is of the V-type with five banks of engine cylinders and is convertible to power or can be used on Diesel. The 27 units to be installed by Worthington are also 2-cycle, 300 rpm. engines with a 15x15 bore and stroke. Pressures on the line have not yet been definitely determined.

6. Inspection of the line will be done by Brokaw, Dixon & McKee, engineers, who were instrumental in initiating the promotion of the line three years ago. The firm has offices in the Gulf Bldg., Houston.

Construction Details: Construction and design of the line will be under the direction of J. P. Bristow, assistant chief engineer, Northern Natural Gas Co., Omaha. Seven hundred miles of right-of-way have been purchased from Hope Natural Gas Co., which company has long had an application before FPC for the construction of a similar line, and negotiations are now going on for the purchase of additional right-of-way for the section from Corpus Christi to the junction with the Hope right-of-way. Plans call for from 10 to 12 pipeline spreads with completion contemplated for summer, 1944. As soon as pipe can be delivered construction will start from the southern end of the line. River crossing work will start as soon as a pipe is received.

A. O. Smith Corp., Milwaukee, Wis., has received an order for 900 miles of 24-in. O.D. welded steel pipe of ¼-in. wall thickness. The pipe, weighing 150,699 tons, will cost approximately $10,000,000. Deliveries are expected to begin in December and will be completed by June.

Financing: Principal money interest behind the new line is the Chicago Corp., a Marshall Field Estate organi-



Map showing general course of the 1228-mile Tennessee Gas and Transmission Co. Pipeline.

zation. Paul Kayser, Houston attorney, who is also financially interested in El Paso Natural Gas Co., is said to control 10% of the line. Brokaw, Dixon and McKee, original promoters of the line, sold out their interest to Chicago Corp. for a reputed $500,000.

Politics: Feeling in Texas is running high against the exportation of the state's natural resources to other sections of the country, and Gov. Coke Stevenson has come out with a statement that "Any concern which builds new pipe lines to export natural gas from Texas will do so at its own risk."

Two possible deterrents to additional export lines were mentioned. One is a higher severance tax, which would make Texas gas more expensive and thus less profitable in competition with fuels produced in other states. The present tax is 5.2% of market value at the well. Tht other is enforcement of strict conservation methods to insure orderly withdrawal of gas as well as oil from underground. Natural gas production already is subject to proration by the Railroad Commission and its waste is prohibited by law.

Possibility of a special session of the Legislature in 1944 has been discussed in Austin, as a result of the constitutional amendment adopted last year prohibiting appropriations from the general fund starting in 1945 unless the comptroller certifies that cash will be available to pay it. Until the fund's deficit is financed by a bond issue or otherwise retired, no appropriation would be valid after 1944 except by consent of four-fifths of the Legislature, according to the opinion of Atty. Gen. Gerald C. Mann.

Thus it is likely that the next meeting of the Legislature will face the issue of additional taxes on natural gas, particularly if the amount sent away from the state is increased.

Both Governor Stevenson and Chairman Beauford H. Jester of the Railroad Commission publicly have opposed export of any Texas natural gas which is needed within the state. The wartime influx of industries has increased consumption of the fuel in Texas, and the availability of gas is held out as an inducement for other industries to establish here.

A further use of natural gas is conversion into gasoline. Railroad Commissioner Ernest O. Thompson pointed out early in the summer that the estimated reserves of natural gas, in terms of potential motor fuel, almost equal the reserves of crude oil. Furthermore, he said the commercially practical processes already have been developed for production of gasoline from natural gas.

We Must Maintain An United Front

By ARTHUR F. BRIDGE

WE ARE again approaching the conclusion of a world war, although I believe we are not as close to peace as we were when this organization began its life 25 years ago. Certainly our position in every theater of the war is now vastly improved.

This country is approaching the end of the second year of this war. We have already been engaged three months longer than our participation in World War 1, yet, despite early heavy losses at Pearl Harbor and in the Philippine campaign, and with twice as many men in the armed forces, our dead, wounded and missing to date are less than one-half those in the first great conflict.

In contrast, the money cost of this war is already many times that of the last, in fact it dwarfs the total cost of all the wars in our nation's history. No one can surely predict what strains this stupendous debt will place upon our economy, but we know that its burden will be upon the necks of our children's children, and will color and affect every personal, business and national activity beyond the lifetime of anyone now living. Beyond doubt this war and its after effects will profoundly alter, if not revolutionize, our social, economic and political structure.

It appears quite unlikely that the transition from a war to a peacetime economy will follow the pattern of World War 1. Only vision, intensive analysis and careful planning can steer us safely through the ordeal of reconversion and accomplish a sound economic readjustment. This need imposes a grave responsibility upon those in executive positions. We must weigh carefully both our present situation and our probable position at the end of the conflict so far as we can now foresee it.

The Competition: Our competitors have been exceedingly active in developing new appliances and preparing for the resumption of sales activities. Over a period of years we have collectively expended large sums and much effort to develop markets for gas and to promote customer good will, hence we should be most diligent in devising means of holding and expanding our markets when peace is restored. One of the most promising of the new tools which will be available is the year-round air conditioning unit. This appliance is now being perfected and, with effective promotion, should provide us with a substantial and much-needed addition to our off-peak load.

AGA Laboratories: As a member of the Laboratories Managing Committee, I have for many years maintained a close contact with direction of the Laboratories and a keen interest in their welfare. Until recently the principal function of our Laboratories has been the testing of gas-burning appliances in the interest of the consuming public. Government restrictions and universal conversion to war production have so curtailed the manufacture of such equipment that testing and approval activities have been almost suspended.

Anticipating this condition, plans were laid in 1942 for effectively utilizing the Laboratories' technical staff and special facilities in supplying engineering services for war products. After months of research, a special oxygen regulating device was developed for use in airplanes. In October, 1942, our association was awarded a contract by the Army Air Forces for 25,000 of these regulators. Engineering and testing services are supplied by the Laboratories, these constituting their major war project to date.

In addition, a number of research and development contracts awarded by the War and Navy departments, and other agencies of the federal government, are now in progress. Briefly, they involve devices for control and regulation of gases. Special apparatus to maintain a constant gaseous atmosphere in range finders, developed as the result of one of these assignments, has been approved by both the Army and Navy, and early award of a production contract by the War Department is expected. Plans call for the Laboratories to test all production models prior to acceptance and to provide other engineering services as required. Present war work will thus be considerably ex-

panded, necessitating use of facilities of the Los Angeles laboratory.

In addition to the responsibilities brought about by direct war assignments, the Laboratories are now engaged in the most extensive research activities in their history. During the year the scope of the research program sponsored by the Committee on Domestic Gas Research was enlarged, and additional funds assigned the Laboratories for its conduct. Its objective is the early completion of extensive fundamental research, designed to aid the development and improvement of domestic gas-burning equipment which will be manufactured in the post-war period. It is agreed that our industry's future domestic load depends in large degree upon our ability to continue to supply the public with new types of equipment incorporating the latest features of design and most effective means of fuel utilization.

While research along these lines has been in progress for some time, it was recognized we would be unable to accomplish the desired results within the time available unless the program was accelerated, hence work on domestic gas research is now being conducted at a rate four times that of a few months ago. This speed-up necessitated utilization of all available personnel and the addition of many new employees, most of them women graduates in home economics, whose work has been quite satisfactory. Two bulletins on domestic gas cooking have already been published and two others on water heating and burner design will soon be submitted. It is confidently expected that the results of this activity will be reflected in new products offered to our customers when appliance manufacture can be resumed.

Previous experience enabled the Laboratories' personnel to devise and perfect control equipment urgently needed by the Army and Navy, in successful competition with much larger industrial organizations. Not only are the products themselves an important contribution, but because of this activity the association has acquired prestige and standing with the research and procurement branches of the armed forces. Director Conner and his associates deserve our praise and thanks for a job well done under difficult conditions.

Home Service: Whether due to foresight or good fortune, the gas industry is to be congratulated in having its home service department well established and functioning when war started. Certainly no other representatives of the industry have contributed more to community life and national welfare under war-time conditions. With many of our normal avenues of customer contact interrupted, they have been missionaries of good will through essential service and information furnished to the public, and cooperation with many local and national organizations. Their work has done much to promote acceptance of our industry as an institution which provides an important public service.

Home service activities are now many and diverse. Aiding the government programs of home nutrition, nutrition in industry, and conservation of fuels and appliances led naturally to establishment of information bureaus on food rationing. This year much of their attention has been devoted to food preservation because of the need to conserve the products of millions of victory gardens. As a means of supplementing home canning, especially for non-acid vegetables, a simple, safe and inexpensive method of dehydration, employing the gas range oven, was developed. Twelve million customer contacts in one year by our home service personnel is a record which tells its own story. It is a record of which we are proud, and work we must keep up.

PRESIDENT BRIDGE in giving his annual address before the St. Louis Meeting of The American Gas Association emphatically stated, "Now, if ever, we must stand together. If the situation in 1918 required a united front, subordination of individual objectives, and the best thought of everyone in the industry, how much more the current situation demands these same qualities in 1943." His plea was for a continued and an aggressive unity both to meet the problems of war and those that will come with Peace. The following excerpts from his address recount some of the accomplishments and summarize some of the problems which are now before the industry. Mr. Bridge is vice-president and general manager of the Southern Counties Gas Co., Los Angeles.

Taxes: I feel confident that I express the viewpoint of our industry in saying that we expect and desire to carry our equitable share of the burden of financing the war, but feel it our duty to direct the attention of the proper public authorities to provisions of the present law which we deem discriminatory and unjustly burdensome. (See Guest Editorial by Mr. Bridge, *GAS*, October, page 21.)

Manpower Problem: A problem which constantly confronts us, and one which we share with all industry throughout the nation, is the increasingly critical manpower situation. More than any other factor, this shortage now limits and controls all of our activities. It would be impossible to discuss in detail so broad and ramified a subject in the limited time available. With the drafting of fathers, the WMC is reaching the bottom of the barrel, and, particularly in certain critical areas, has resorted to several desperate expedients (including diversion or cancellation of war contracts) to avoid national labor conscription, which may yet prove to be the final solution.

Our association has done everything possible to alleviate difficulties due to attrition of industrial labor caused by the draft. Negotiations conducted by our committee on personnel practices led to the declaring of the gas industry as essential, and to the listing of our critical occupations for the information and guidance of local draft boards. The administration of induction processes by local bodies is inevitably accompanied by considerable lack of uniformity in the disposition of deferment cases. Some boards are sympathetic to requests for deferment of key men whose loss would impair the functioning of our organizations; other boards don't want to listen. They are under pressure from many directions, and the demands to produce men for the armed services are much heavier on some boards than on others.

As the war proceeds we may expect a still tighter situation. The companies will have to deal with this problem to the best of their ability and resourcefulness. A series of conferences between personnel managers has proved very helpful in meeting common problems. We have done wonders in adapting ourselves to changing conditions and readjusting our remaining available manpower. Apparently we must do still more, and there is no doubt that we shall meet the challenge.

Conclusion: In concluding this brief commentary I wish to leave with you two thoughts. While the transition from war to peace will doubtless be a difficult and complex period which will impose readjustments more drastic and unpleasant than those which we have yet encountered, bear in mind that we are engaged in the business of supplying fundamental and essential human needs. People must cook their food. They must bathe and be kept warm; and if we continue, as in the past, to provide the most convenient and satisfactory means of satisfying those needs we shall safely weather the post-war storms.

The second thought is as old as time, but it cannot be overstressed—the need for unity and concerted action on all matters affecting our industry — in union there is strength.

Cooperative Planning Between
FEDERAL AND STATE AGENCIES

By PAUL L. HOLLAND

Chief Engineer, Public Service Commission of Maryland, Baltimore*

JOINT action by and between federal and state agencies is the key to success in our dual form of government. It is quite clear that the founding fathers contemplated this procedure when our plan of government was framed. While there was abundant reason at that time for making provision for cooperative action, subsequent expansion of our borders, extension of government into more varied fields of activity, and the increased complexity of modern life, make such action at this time not only reasonable but absolutely necessary. Encompassed by our continental boundaries alone are communities which differ in customs, in needs, in opinions, almost as greatly as the nations of the world now arrayed in battle. It is not at all difficult to understand that the best we can hope for, in our form of government, is a well-balanced compromise between the conflicting, competitive and often selfish interests of these widely separated communities and of particular groups, trades, professions, or organizations scattered throughout our land.

Such people cannot and will not be regimented into any stable political or economic status. However, by cooperative action, suitable to the time and place, almost any problem may be solved in a manner reasonably satisfactory to all parties concerned. There is a growing realization of this fact by those in business and in government, and as to local, national and international matters.

Just now we are hearing a lot about planning—planning for control of almost every phase of human activity, from birth control to stabilization of world economics. Among the numerous schemes presented for consideration are some that are staggering in concept and in rosy-hued promise. Others are nothing more or less than early attempts to insure the continuation, in the post-war period, of unfair practices, greedy exploitation or selfish personal power. Between these extremes are found many very desirable and necessary plans for bringing about these things which, it is believed at this time, will assist to the greatest possible extent in smoothing the path of transition from all-out war to a peace-time manner of life, probably vastly different from anything we have experienced in the past.

Many of these plans involve joint action by federal, state and municipal agencies, and effectuation will require unselfish and enthusiastic support by government and industry. There is at present considerable difference of opinion as to the parts to be played by government and by industry, and there is a measure of doubt in the minds of many industrial leaders as to just what is being planned by certain governmental agencies. The following paragraph is taken from a recently published plan for post-war activity in a large metropolitan area:

> "If citizens who believe in their country do not plan ahead to make and keep it prospering, as they want to see it prosper, then government will do the planning for them and the American citizen will be the creature of government, not government the creature of the citizen."

If private citizens, operating through normal industrial methods, can bring and keep a reasonable degree of prosperity, there is little likelihood of a demand for governmental planning except along those lines generally conceded to be within the province of government.

Extent of Federal-State Cooperation: I'll venture to say that few know the extent to which the Federal Power Commission, the Federal Communications Commission, and the Interstate Commerce Commission, particularly division 5, have cooperated with state commissions in the handling of the various problems which have arisen in the last few years. In the case of division 5, Interstate Commerce Commission, that is, the motor carrier division, the statute provides definitely for joint action under certain conditions and permits it under other circumstances. This is the only federal agency operating under specific statutory requirements governing cooperative action with state commissions. Of course, at the present time the number of motor carrier cases to be acted upon has been greatly reduced. During the period immediately preceding the war, when thousands of cases were heard, more than 55% of them were before joint boards. In addition, joint action was had in many cases conducted by the Interstate Commerce Commission concerning freight rates, classifications, etc.

The Federal Power Act, section 209, provides for voluntary cooperation and mutual assistance between the Federal Power Commission and state commissions. Such action was quite fully implemented by an agreement in 1936 as to procedure between the Federal Power Commission and the National Association of Railroad and Utilities Commissioners. During the convention of 1936, when this agreement was ratified by the National Association of Railroad and Utilities Commissioners, Hon. John J. Murphy of South Dakota, who was then chairman of the committee on cooperation between federal and state commissions, made a statement which sums up beautifully the purpose, the method, and the spirit of cooperative action. He said:

> "That questions of jurisdiction and extent of power of state and federal commissions may well be laid aside, and that we may profitably direct our attention to considering how much can be accomplished by pooling the resources and the energies and the wisdom of the state and federal commissions for the purpose of fully covering all of the ground in the regulation of electric service.

During the last three years alone, cooperative action has been taken in the Federal Power Commission cases listed below. It will be noted that the Federal Power Commission and almost every state commission have been involved in one or more of these cases. Geographically they cover the territory from New England, down the Atlantic to the Gulf, thence via Texas to the far Northwest. (See Table 1.)

In addition to these formal cases, there have been many conferences, much correspondence and committee work on subjects of joint interest.

The number of cases heard by the Federal Communications Commission is small as compared to the dockets of some other agencies. However, under the cooperative agreement worked out between that body and the National Association of Railroad and Utilities Commissioners, state commissions have

*Excerpts from a paper presented before the 21st Annual Conference of State Utility Commission Engineers at Chicago, Ill., June 16 and 17, 1943.

participated in a number of rate and accounting cases and in the recent determination of bases for allocation of property, revenue and expenses as between interstate and intrastate toll and exchange service, a matter which is still pending.

One recent proceeding of the Federal Communications Commission highlights a phase of state regulation which is of prime importance—I refer to the intrastate rate case in Iowa, where state regulation is lacking. In this case the fault, if it may be so called, lies in lack of authority on the part of the state commerce commission to fix rates for telephone or telegraph service. In other states cooperative action has not been possible because state bodies simply failed to take any part.

Such a hands-off policy is not conducive to the mutual understanding which should smooth the way for the dual control. Zealous advocates of states' rights have no cause to complain of encroachment by federal agencies if the state fails to do what is necessary for effective utility regulation.

No working agreement between the Securities and Exchange Commission and state commissions has yet been framed, and due to the comparatively few points of contact, with a possible further reduction therein, it may not be necessary or desirable to make any formal agreement on procedure. Relations so far have been satisfactory and effective joint action has been taken in a number of cases.

The smooth cooperation of state commissions with the Interstate Commerce Commission, the Federal Power Commission and the Federal Communications Commission has not come about by accident, nor is it a natural outgrowth of the dual system under which these agencies operate. The records of the National Association of Railroad and Utilities Commissioners tell the story of a struggle for understanding, for cooperation, for elimination of sectional considerations or special interests, in order that the system might be effective.†

Many members of the federal commissions with which state regulatory bodies have to deal have had years of experience on state commissions, and accordingly have a full knowledge and appreciation of the mutual problems. This knowledge and understanding has helped greatly to smooth the paths of action, to bring about more effective regulation and to reduce the time, effort and cost of such regulation.

TABLE 1

Docket No.	
G-165	Tennessee Gas & Transmission Co.
G-168	Western Natural Gas Co.
G-178	Independent Natural Gas Co.
IT-5500	Chicago Distribution Electric Generating Corp.
IT-5462	Northwestern Electric Co.
G-143	Columbian Fire Corp.
IT-5494	Safe Harbor Water Power Co.
IT-5015	Metropolitan Edison Co. *et al.*
G-118 and 124	Canadian River Gas Co.
G-121	Colorado-Wyoming Gas Co.
IT-5686	Utah Power & Light Co.
G-100, 101, 113, 127	Hope Natural Gas Co.
G-109, 112	Natural Gas Pipeline Co.
G-132, 149	Interstate Natural Gas Co.
G-208, 209	Lone Star Gas Co.
IT-5695	Mississippi River Power Co.
IT-5728	Potomac Electric Power Co.
IT-5714	California-Oregon Power Co.
G-174	Kentucky Natural Gas Corp.
IT-5609	Kansas Gas & Electric Co.
IT-5737	Kansas City Power & Light Co.
IT-5597	Louisville Gas & Electric Co.
G-200, 207	Panhandle Eastern Pipeline Co.
IT-5746	Empire District Electric Co.
IT-5611	Pacific Power & Light Co.
IT-5779	Portland General Electric Co.
G-159	Peoples Natural Gas Co.
	Duke Power Co.
	Naragansett Electric Co.
IT-5729	Kingsport Utility Co.
G-128	Border Pipeline Co.
G-216	United Gas Pipeline Co.
	Utah Light & Traction Co.
	Virginia Electric Power.
	Virginia Public Service Co.
	Central Vermont Service Co.
	Twin State Gas & Electric Co.
IT-5669, 5670	St. Croix Falls Improvement Co.
IT-5722	Wisconsin-Michigan Power Co.
IT-5765	Superior Water, Light & Power Co.

The results of planned cooperative action between state utility commissions and the federal commissions referred to above have been good. However, a complete picture of "Cooperative Planning Between Federal and State Agencies" is a big order. I can give only a few ideas and a few data, careful consideration of which may be helpful. I can point out cases of action without plan, and plans which result in somewhat futile action.

Present Difficulties in Federal-State Cooperation: Since the beginning of the present emergency, numerous new agencies have been set up in Washington, and new duties have been thrust upon older agencies. In almost every case these agencies have some contacts, local, state or regional, with established state departments of one type or another. In at least one field, that of employment, the state bodies have been federalized, to the practical exclusion of state action. In other instances, effective state cooperation has been rendered impossible by the fact that the local bodies have been bypassed or ignored. Transit lines have been eliminated by federal order without consultation with the utility involved or the commission having jurisdiction. This is a very direct and effective type of action, but it is destructive of the cooperative spirit which is far more important than quick and successful action in a few isolated transportation cases.

With few exceptions, established state agencies or local war-time committees are fully competent to collect information, to serve in a cooperative or executive status, or to take, under federal directive, any local action needed in the emergency. As to information, the files of most public utility commissions contain all the data required on many subjects now being re-investigated by branch offices of various federal agencies — an activity which is costing a fabulous sum in money, time and manpower. Nowhere is this duplication of effort more apparent than in the utility field, especially in transportation. It has been said that transportation has been regulated to death. Certainly a vast amount of data is available, upon every phase of the industry. Yet we find an army of men and women making new studies for the Interstate Commerce Commission, the Office of Defense Transportation, the military services, the Office of Civilian Defense, the National Highway Traffic Advisory Committee, the Office of Price Administration, the Public Roads Administration, the Department of Justice and the rubber administrator. Some of this work is being handled by local committees, representing the national groups, in a thoroughly decentralized and efficient way. Other phases represent perfect duplication of effort, without coordinated plan, and with possible conflict in the action suggested to be taken in emergency. Prof. Ruggles of the Harvard School of Business Administration, in a recent paper, called attention to the lack of coordination of the activities of federal agencies dealing with the power industry, and stated that government is now making the same mistake in regulation that holding companies made in management.

Our Supreme Court, in several recent opinions, has expressed a confidence in the ability of local bodies to handle local problems which is not reflected in the direction of these widespread activities of our war-time agencies. *There is, in the minds of many people, a fixed conviction that back of some of these expanded functions is a purpose extending beyond winning the war. If such is the case, it is to be*

†Those interested in historical background may find a wealth of information in the National Association of Railroad and Utilities Commissioners' Convention Report, 1935, pp. 311 to 408. In this citation will be found references to action extending back as far as 1922. The standing committee on cooperative action has made a report to the national association each year since.

hoped that less expensive and more straightforward methods may soon be adopted. There is little excuse in the present emergency for expending money or manpower in non-productive or non-essential effort. Cooperative and integrated action, confined to those economic phases which must be regulated, and which cannot be handled locally, will best promote an early victory.

May I, in conclusion, repeat a warning which has been heard in many places during recent months? I trust that my comments will not be construed as "political" in the usual sense of that term. I subscribe to the tenets of no political party. These tenets vary too widely and too frequently to be considered fundamental principles, and only on the basis of fundamentals can one at this time exercise properly the inherent rights of citizenship.

Ours is a comparatively young nation, founded upon principles which have proved to be so greatly superior to those underlying the social and economic systems of many other nations that, in our short span of life, we have reached a pinnacle of success envied by almost every people on the earth. Now we are told by some that our system is outmoded and must be superseded by other forms, tried out in other lands, and in some instances discarded thousands of years ago. Our system is not perfect—it needs to be changed, in details, to give greater recognition to the modern and growing humanitarian concepts; to put more effective curbs upon excesses, by capital, by labor, and by pressure groups of all kinds; to make possible prompt legal and effective local control by neighboring or regional groups of states of matters which transcend present "states rights," and to eliminate from local, state and federal government unnecessary or inefficient subdivisions, units, bureaus or systems.

All this can be done within the framework of our present system. Much is being done. More widespread and advanced education, together with the glaring publicity made possible through the press and the radio, will speed the program. It is not necessary to sink our ship in order to get rid of a few mice.

The fixed conviction to which I referred in a previous paragraph is based largely upon the public announcement of policies which portend the socialization of large industries, while at the same time we are witnessing the most phenomenal growth in bureaucracy the nation has ever known. There is an element of incongruence in this picture—a form of socialism dictated from above rather than emanating from the people.

I cannot believe that America is yet ready to scrap the vehicle in which we have traveled so rapidly, but unless we can effectuate, promptly, a system of greater cooperation as regards several phases of government under which there is a maximum of local and a minimum of central control, we will soon be afoot on a rough road.

California Commission Rules on Two Rate Cases

THE California Railroad Commission in Decision 36686 filed Oct. 26 has suspended rates filed last August by Pacific Gas and Electric Co. for a new type of interruptible gas service. In suspending the rates, however, the Commission authorized a somewhat lower level of rates and a lower minimum charge than that proposed by the utility, according to a communication from Roy A. Wehe, the Commission's gas and electric engineer. The new service is similar to the old surplus service which for some months has been closed to new customers and to new uses for old customers.

Essential differences between the new and the surplus service is found in the fact that there is no longer surplus gas available for distribution by P. G. & E., since the major source of supply is no longer casinghead gas produced in combination with oil but resources drawn directly from dry gas fields. Thus, since there is no waste or blow, there is no need to dispose of gas on a surplus basis. The company does have, however, during off-peak seasons unused transmission capacity, and it is this fact which governs its ability to provide interruptible service.

The curtailable rate authorized will provide a rate level about midway between the utility's present firm industrial rates which for larger users average around 26c to 27c and the present closed surplus rates which average about 14c per Mcf. Thus medium and large sized customers can earn a rate between 18c and 22c. While the rates are somewhat higher than the fuel oil price of 90c to which they are geared, the price of fuel oil f.o.b. Richmond is now $1.15 per barrel, and this is fairly comparable with the gas rate, assuming a 1100 Btu. content, which the utility is required to serve in the areas affected.

Since the rates authorized are lower than the firm industrial and thus do not provide for full costs and since they provide for a larger portion of the full costs than the closed surplus schedules, the new interruptible tariffs provide a different and higher class of service than that rendered under surplus. Accordingly the new rates enjoy priority over all surplus schedules, except the company's own requirements. This means that customers buying on the new interruptible rate will hold priority for gas service over old surplus rate buyers.

Immediate effect of the new rate will be to provide for a new dehydrator load coming on the utility's system this year, which will use in excess of 10,000,000 cu. ft. per day. Such load, when authorized by OWU, is subject to shut-off during shortage periods. The new rate ties in also with the program of PAW which calls for the transfer of oil loads to gas. This it will do by providing a rate on an interuptible basis comparable to that for oil.

While there is a limited margin of gas supply for such purposes, it will now be possible to make maximum use of the State's fuel resources. Flexibility of the program is seen in the fact that oil users switching to gas can readily switch back to oil during periods of high gas demand.

The California Railroad Commission Oct. 21 vacated the suspension of certain electric and steam rates of San Diego Gas and Electric Co. (decision No. 36672). Import of this order lies not so much in the monies involved nor in the action itself, but rather in the position taken by the commission in view of the fact that OPA had filed a brief opposing the increase and asking that the suspension be made permanent.

The following quotation from the decision is helpful in understanding the commission's viewpoint:

> "It should be understood that this rate adjustment is not made in order to increase the net earnings or the rate of return of the utility. It is made to maintain a proper and fair relation between the different classes of consumers. If through this action or because of other reasons the earning position of this utility should become so favorable that a rate of return greater than warranted will be produced, then all parties may be assured that this commission will take appropriate action to fix fair and reasonable rates."

Suspension of these rates will permit an increase of gross revenue of some $88,000.

CALIFORNIA'S BUTADIENE PROBLEM

Suit Brought by City of L. A. Brings Washington Action; Closed Water Cooling System to Stop Fumes Being Installed

DRAWING aside the curtains of censorship which have surrounded the haze-shrouded butadiene plant of the Southern California Gas Co., the government on Oct. 29 allowed a first-hand inspection of the plant by newspaper reporters and press representatives. The tour of the heavily guarded, 60-acre plant which is situated at the gas manufacturing plant of the gas company was conducted by Guy Corfield, research engineer, and Otto Mauthe, public relations representative.

Since June 22 when the much headlined $12,000,000 plant first went into action, two substances have been produced:

1. Enough butadiene to enable the California synthetic rubber program to turn out over 4,000,000 lb. of rubber, or 400,000 passenger car tires. And this has been done with the plant which supplies the major portion of the butadiene, running at far from capacity and on an extremely interrupted schedule. The butadiene produced is about the purest in the country, according to Dr. Henry Cox, assistant to vice president, Rubber Reserve Co. Purity of the butadiene is an important factor in governing the quality of the final rubber product, stated Corfield.

2. Vapors, fumes and haze which have tickled the nostrils and bleared the eyes of Los Angeles' otherwise sun-drenched citizenry. The fumes brought a barrage of front page protests from judges, health officers and councilmen, which finally culminated in the filing Oct. 18 of an abatement suit against the gas company, RFC and Rubber Reserve.

ACTION IS now being taken to revamp the Southern California Gas Co.'s butadiene plant to eliminate the fumes which have become a nuisance to the residents of Los Angeles. It is expected that the work will be completed and that the plant will be operating to near capacity by the first of the year. The present article makes no attempt to discuss in full the technical ramifications of the operation of the plant, nor to describe in detail the equipment used. A thoroughgoing discussion of the plant, written by H. L. Masser, executive vice president of the gas company, was published in GAS, July, page 21.—Editor.

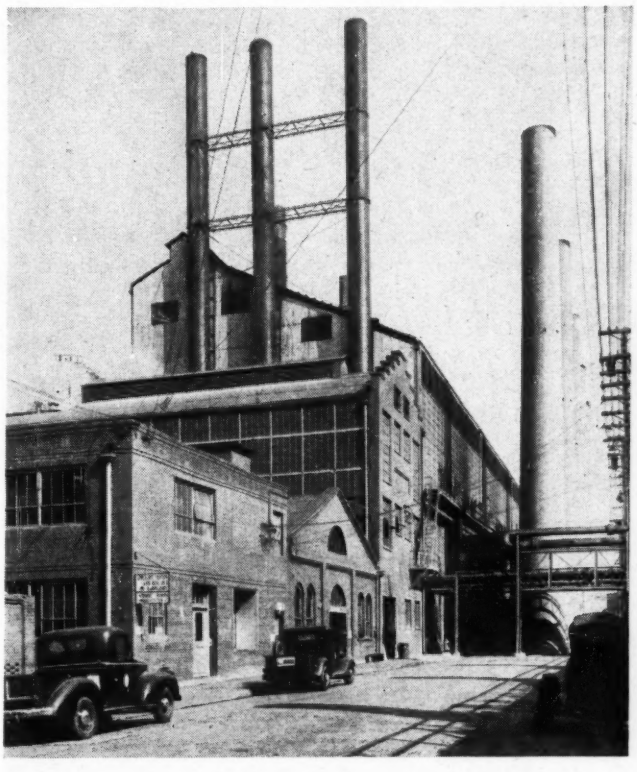
Bringing of the suit brought the situation to a pin-point head:

1. Official Washington stirred in its swivel chairs. Col. Bradley Dewey, rubber director, flew to Los Angeles, and in a blunt, 30-minute factual exposition told the city's well-meaning councilmen the all-important part that the gas company is playing in the $50,000,000 California rubber program which is providing about 1/13th of the nation's synthetic rubber supply.

2. In a 10-minute session on Oct. 27 the city withdrew its suit.

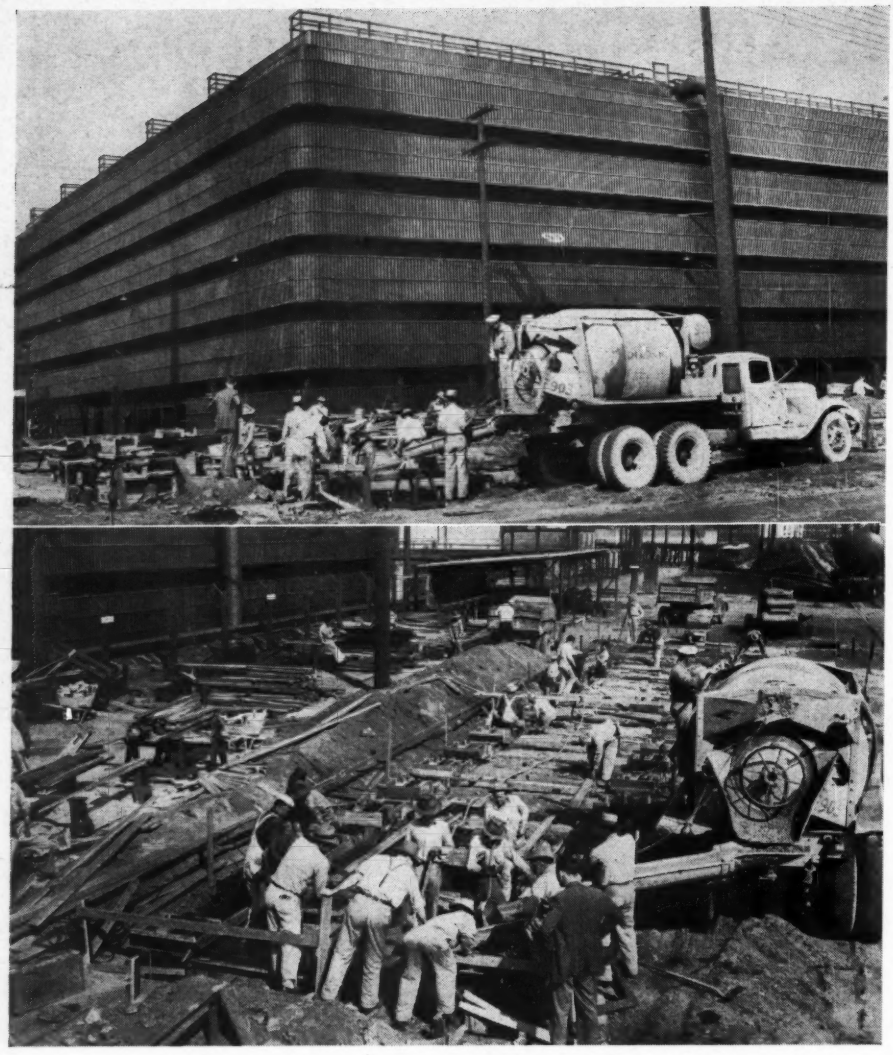
3. Col. Dewey cleared the way for speedy procurement of vital equipment needed to eliminate the fumes.

Value of Frank Publicity: The plant tour was proof of the value of first-hand, frank, factual exposition of controversial subjects concerning rela-



View showing the five stacks leading from the five twin-sets of 10 generators in which the butadiene cracking process takes place.

G. D. Melissarato, Defense Plant Corp. engineer; J. G. Rollow, superintendent of construction; and Col. Bradley Dewey, rubber director, look over plant blueprints.



ABOVE: The open-air cooling tower from which fumes from oils held in emulsion in the cooling water partially escaped. BELOW: The foundation goes in for the enclosed shell and tube cooling system, which will prevent escape of the fumes.

tions between public servants (such as the government and the utilities) and the public. It was during this tour that the reporters (and therefore the public) learned for the first time that the fumes were not caused by butadiene, a word that would likely scare any layman, but by a mere .2% concentration of light oils in the cooling water, which partially escaped as the water was cooled over an open type cooling tower.

Another point of controversy, one which has led to misunderstanding and friction between certain industrial factions, was the seemingly low yield of the plant (3½% of butadiene).

During the tour Corfield clarified the minds of the reporters on this point. In the process of producing butadiene, nothing is allowed to escape unused, except a *portion* of the heat which goes up the flue stacks of the plant. From a single unit of naphtha the following is produced:

	Per Cent
Butadiene	3½
Normal butylene*	2
Aviation fuel stock	40
1050 Btu. gas†	54½

*The normal butylene is also delivered by pipeline to Shell Chemical Co., where it is converted into butadiene for use in the synthetic rubber program.

†The fuel gas produced can be used either to heat the boilers where steam is produced, or during peak days to furnish 50,000,000 cu. ft. to the distribution system. When gas is diverted to distribution, the steam boilers in the butadiene plant can be run on a low-grade oil, which does not meet navy specifications.

"We feel that in the operation of this plant we are performing three functions useful to the war effort," stated Corfield. "We are producing butadiene for the rubber program, aviation fuel stock to help bomb Tokyo, and fuel gas which can be used either to operate the plant or for distribution in our mains during peak periods."

It was brought out during the discussion that the fumes which emanate from the plant were similar to those found around any oil refinery. The Los Angeles county smoke and fumes committee had them analyzed, pronouncing them annoying but not lethal.

An interesting sidelight comment came from Corfield: "We are making synthetic rubber from petroleum. The Japs are making high octane gasoline from natural rubber."

Following the tour and exposition in layman's language of the purpose and operation of the plant, Corfield got down to a discussion of the problem at hand.

The Problem: In the process of producing butadiene the hot vapors are cooled by direct contact with water. The plant uses about 1,000,000 gal. of water circulated at a rate of 22,000 gal. per min. Since this is enough water to serve a fair sized city, and since to dispose of the water after one using would not only be wasteful but would tax the city's sewage system beyond its limits, it was necessary to install equipment to purify and cool the water. In the purification system, it has not been possible to separate all of the hydrocarbon fractions, some .2% of light oil remaining in emulsion. As the water was cooled over the cooling tower, a portion of these fractions escaped, causing a widespread nuisance.

The Solution: Rubber Director Dewey has promised that the plant will be revamped to eliminate the nuisance by the early part of December. Plans call for the installation of a closed shell and tube heat exchanger system together with flotation cell and filter equipment to replace the present system whereby the water is cooled in an open cooling tower.

The water which cools the gas by direct contact will first be partially cleaned by the flotation cell equipment. This is done to eliminate fouling of the heat exchanger system. The water will then be cooled in the tubes of the heat exchangers, which exchangers will have fresh water in the shells, which fresh water will be cooled in the cooling tower. Thus, nothing but clean water will go over the cooling tower. The cleaned and cooled water will then be recirculated in the plant. Since it is necessary that some surplus water be continually bled from the system, a pre-coat Oliver filter will be installed to give this water a thorough cleaning and make it available for general plant purposes.

The foundations for the enclosed cooling system are now being completed. Plans call for the installation of 45 heat exchangers, giving 60,000 sq. ft. of cooling surface. Cost of the new cooling system is $700,000.

OWU Issues U-7

Natural gas operations were further affected with the issuance on Oct. 25 of U-7 by the Office of War Utilities, War Production Board. The new order supersedes Limitation Order L-31.

Integration: The order is being broadened to include non-utility suppliers, the more important provisions:

1. A non-utility supplier which was delivering natural gas to a utility in a shortage area on Oct. 1, 1943, may not reduce deliveries without WPB approval unless (1) it can no longer maintain such deliveries, (2) is in the process of curtailment under terms of the order. The term "natural gas" has been redefined to cover refiners and other processors of petroleum products in the order, and disposition of any combustible fuel gas at the completion of the processing operation is now governed by U-7.

2. WPB may require curtailment on the systems of any utility or non-utility supplier in order to increase deliveries to systems where an acute shortage exists.

Operations during gas shortages: Two steps in the sequence of interruption of deliveries during shortage periods to Exhibit A consumers have been added:

1. It has been provided that in interrupting service, deliveries shall be maintained in sufficient quantity to prevent permanent damage to production and service facilities. Example: a glass manufacturer would be allowed enough gas to keep the contents in its tanks liquid, thus preventing freezing or draining of tanks.

2. Exhibit A consumers who can be curtailed without loss of production will be curtailed in advance of other Exhibit A consumers. Information as to identity of customers to be curtailed may be obtained by any supplier through WPB.

Forms: U-7 provides for several forms to be used in connection with gas shortages.

WPB-619 is a consumer classification list, replacing PD-282, and is to be filed with WPB. This year, due to shortness of time, the form will be filed by all major systems and by smaller systems in critical areas by Nov. 25. Usual deadline, Nov. 15.

WPB-2077 summarizing storage operations will be filed only by companies specifically requested to do so.

WPB-620 summarizing curtailment operations must be filed monthly by every system which has curtailed deliveries to any consumer during the previous month.

WPB-3314 is the form on which all applications are to be made for exemptions from restrictions in the order.

Turnover Reduced by 48-Hour Week

ESTABLISHMENT of a 48-hour week has materially aided the San Diego Gas & Electric Co. to cope with manpower problems in an area of critical labor shortage, Laurence M. Klauber, vice president and general manager, reports.

Extension of the work schedule in the mechanical departments from a long-established 40-hour week made possible release to other war industries of appoximately 70 out of the 1000 workers involved, according to Mr. Klauber.

In addition to this benefit to the community's war effort, the concern itself has found the 48-hour week advantageous from the standpoint of reducing turnover and employing new workers, the executive pointed out.

While operating on a 40-hour week, the utility was at a disadvantage in completing for the available labor supply with San Diego industries, virtually all of which offered overtime, at time and one-half pay, of eight to 20 hours a week.

With the company now providing as much overtime as most other plants, it is in a better position to attract labor, and to retain its own employees who might otherwise be inclined to leave for the aircraft or shipbuilding industries, Mr. Klauber commented.

A curious sidelight on the overtime pay was afforded when the War Labor Board had to approve a downward revision of pay, agreed on by the International Brotherhood of Electrical Workers, as well as the company, before the 48-hour week could go into effect.

The company's contract with the union provided double time pay for Saturday work during the years that a 40-hour week was the normal schedule. However, with a 48-hour week to be established, at least for the duration, the union endorsed a proposal to cut the Saturday overtime pay to time and one-half. Since all wage changes must be approved by the WLB, this unusual move to cut an hourly rate had to be submitted to the federal agency.

The company's 250 office workers remain on a 40-hour week, since no shortage of this type of labor is recognized in San Diego by the local war manpower committee.

MISSING IN ACTION

"Missing in action" is the report sent out to the parents of Tech. Sgt. **Russell Eldridge,** who had just completed his 20th mission over Europe as an aerial gunner on a B-17 and who was anticipating a furlough home after five more combat trips. He had been decorated with the Order of the Purple Heart and an Air Medal with six oak leaf clusters. Former employee (meter reader) of San Diego Gas & Electric Co.

S-Sgt. **Thomas M. Power,** missing in action in the English theater of war. Young Power was serving as a waist gunner and assistant engineer on a B-17 Flying Fortress. Formerly employed in the service department of Arkansas Natural Gas Corp., Shreveport, La.

Lieut. William E. Hunt, 22, first pilot on a B-24, was killed in an airplane crash while making a routine flight from his home base at Salinas Army Air Base, Calif. Employee Jackson district engineering department, United Gas Pipe Line Co.

Lieut. William R. S. Jones, killed in action in North Africa. Formerly junior engineer, Arkansas Natural Gas Corp., Shreveport, La.

Lieut. John H. Perkins, Jr., killed in action over France. Lieut. Perkins was pilot of the "Windy City Challenger," who was cited for heroism in action, and whose bombing feats over Germany and German-occupied France were the pride of Chicagoans serving in England. Former employee at South District, The Peoples Gas Light & Coke Co., Chicago.

Lieut. **Robert Harrop** of the U. S. Army Air Corps has been reported missing in action in the African field. Employee Gas Service Co., Ottawa, Kan.

Flight Engineer **Harry L. Bullard,** killed when his Flying Fortress met with an air mishap while on patrol duty with the Army Air Forces in South America. Employee Southern Cailfornia Gas Co.

Lieut. **Leonard Keyes,** reported missing in the Pacific area. Former engineer (Jackson and Flint plants), Consumers Power Co., Mich.

Major **J. W. Dodson of the** Army Signal Corps was killed in an airplane crash while flying from his headquarters to Clorida on a military mission. He was attached to the Second Air Support Command at Barksdale Field, La. Employee Pacific Gas & Electric Co., San Francisco.

Signalman 3/C **William H. Evans** of the United States Navy was killed in action in the South Pacific area on May 19. He was for 12 years an employee of the Southern California Gas Co., Los Angeles.

Post-war NOTES and NOTIONS

By STANLEY JENKS

Face Saving

Of course they'll fire him. His membership will be dishonorably cancelled in the Bull and Booshwah Copy Writers' Association and, hapless lad, he'll undoubtedly be condemned as un-American by his erstwhile friends. I refer to the fellow who is writing the copy for one of our leading soap companies, whose current advertising copy is callously proclaiming that its soap won't make any or everybody look like Greer Garson. "The one and only purpose of soap is to clean . . . neither————————soap nor any other soap can make you beautiful," reads one ad.

This stark realism is devastating, to say the least. No electronics! No plastics! No mumbo-jumbo magic brewed in a war-time kettle!

What the hell are we fighting for? Surely for more than a mixture of perfumed fats and alkali to keep our faces clean.

This soap company should be investigated by the Dies committee.

Puzzling

Not being an economist, but merely a non-technical engineer, I am puzzled. It all comes about over the assertion, so often made about post-war prospects, that public savings, especially in war bonds, are piling up at the rate of, shall we say, 30 billions of dollars a year, and accordingly there are big times coming when we start to beat our swords into plowshares. At the same time we, the American public, are shooting away our substance in this way at the rate of 100 billion dollars a year. Not being an economist (or a New Dealer), I am blowed if I can see how we can be spending it and saving it at the same time. It seems to me that money invested in war bonds is money loaned by the public to itself and, when the time comes to repay it, the money must be taken by taxation or reborrowed from the public itself, which is just another way of taking it out of one pocket and putting it in the other, without any intrinsic change in the amount of capital available. There seem to be two courses available.

First, the public can inflate the currency and duck its obligations to itself by oiling up the old printing press. The Germans and the French did this after the last war. The prospect is not alluring, and offers today the strongest inducement to all of us to keep prices down and shun black markets. The only other alternative is a post-war plan that will keep the wheels turning and producing the real wealth and employment, so that it will not be necessary to take it out of one pocket to put it all back in the other.

The Committee for Economic Development, therefore, has the right idea, for it aims to create post-war wealth the only sound way, that is, by productive industry. In that no industry is more allergic than ours to inflation and swollen taxes, every gas man has a special stake in the CED's success, because thriving industrial customers and wage earners are his best customers.

Customer Ideas

As I talk to people, ordinary folk who are run-of-the-mill gas utility customers, I find in their post-war possible demands none of the mumbo-jumbo phantasies of what might well be called the electronics-mentality of some of our effervescent post-warriors.

According to my Jenks (Gallup will be jealous) poll, people will want the best gas ranges we can offer, leaving it up to us to insure them the best for the money. I found no particular demand for built-in radios, combination range or daybeds, or automatic doughnut hole attachments. Regarding material, they don't give a hoot whether it is made of glass, plastics, laminated wood, or sugar candy, so long as it will give them the coolness, convenience and speed they have come to expect of a modern gas range. (The CP range may be temporarily gone, but it certainly is not forgotten.) The same general thought prevails on self-action gas water heaters. In refrigeration there is a hope that you won't have to take out 20 dishes and bottles to get at the bottle of cream which, like them, I almost invariably find at the back when I scout the possibilities of a midnight bowl of cereal (rich in XYZ vitamins, you know). They are open-minded on quick freezing and a low temperature compartment, which indicates they will take them if available.

The greatest, in fact unanimous, enthusiasm is for post-war air conditioning, and we in the gas industry, with equipment far beyond anything competition can begin to touch, have a real jackpot winner available. It will take better than ordinary salesmanship to cash it in, and I can make no more trenchant suggestion at this time than that strategy be planned as soon as possible, and staff training started. There should be nothing haphazard about this job, and in no local operation, when peace is restored, should there be any reason for a "too little and too late" air conditioning alibi.

Air conditioning should sell gas central heating like hot cakes. Will it? The answer lies not in any committee of the AGA but in the planned efforts of each individual gas company.

The Cost Element

It is one thing to sit on an artist's stool and cook up pictures of helicopters landing on the front lawn, women pushing buttons at their bedside to do the housework and cook the meals—electronically, of course—but another to design something in a manufacturing organization, subject to the censorship of (1) a hard-boiled production manager who is more apt than not to say it cannot be done economically in quantity, and what's he going to do with his present tools, fixtures, dies, and patterns anyway, and (2) a sales executive who wants to know how much it will cost and, if so, how in blazes can it be sold to meet this and that competition, and (3) a vice president or president who very much doubts whether the necessary investment to launch your brain-child can be justified.

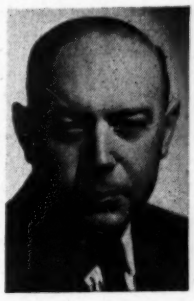
Utility merchandisers should keep this definitely in mind before they start howling for radical innovations from their manufacturers.

Report of the Pacific Coast Gas Association's

Gas Industry Development Committee

H. L. MASSER, Chairman

2. Improvements in Gas Equipment



H L. Masser

GAS presents herewith the second section of the Report of the Pacific Coast Gas Association's Committee for Industry Development, which has been compiled under the chairmanship of H. L. MASSER, executive vice president, Southern California Gas Co., Los Angeles.

The objectives in the PCGA program are: (1) Studies of Potential Appliance Markets; (2) Improvements in Gas Utilization Equipment; (3) Sales Promotion Plans, Advertising and Financing; (4) Engineering and Technical Studies; (5) National Economic Factors. These five points were extensively covered in a report presented before the 50th Annual Convention of the Pacific Coast Gas Association held in Los Angeles, Sept. 22 and 23. The first section of this report on Appliance Markets was published in GAS, Oct., 1943, P. 33. Other sections of the report will be published in later issues of GAS.

Committee members are R. G. Barnett, Portland Gas & Coke Co., Edward H. Coe, Central Arizona Light & Power Co., H. L. Farrar, Coast Counties Gas and Electric Co., A. E. Holloway, San Diego Gas and Electric Co., E. L. Payne, Payne Furnace & Supply Co., James F. Pollard, Seattle Gas Co. (retired), H. A. Strong, Servel, Inc., W. G. Vincent, Pacific Gas and Electric Co.

1. Recommendations for the Improvement of Design of Gas Ranges

Few, if any, of our important manufactured articles or machines have reached the degree of perfection that precludes further improvement; look, for example, at the automobile which has come forth from year to year with radically changed designs and constantly better performance. With equal verity, our gas ranges are susceptible to many improvements as to design and performance, and to thereby achieve greater customer appeal and satisfaction. The automobile industry is not now involved by competition between two entirely different types of power. A single industrial group, the oil companies, supply all of the energy. On the other hand, the range industry has two primary factions: the gas group and the electric group, with the energy supplied by competitors. Because of the intensity and seriousness of this competition, the gas industry cannot for one minute afford to let its aggressive electric adversary go unchallenged. For the security of our business, it is the responsibility of the combined gas industry to produce and maintain an output of ranges that are superior to all competitors. The gas range is our key appliance.

To accomplish this purpose, we must frankly and thoroughly analyze the design, performance and construction of our present equipment, and then endeavor to produce new appliances which best meet most of the desirable features and particularly have "eye-appeal." This will require the joint efforts of the utilities and the manufacturers. The utility needs from the manufacturer ranges which can be sold readily because of actual customer preference, and backed up by good construction and thorough testing to assure reliability of service. From the other side, the manufacturer needs to know from the utility the specifications required for the range to successfully top the competitive market. Further, both utilities and manufacturers need to know what their competitor is going to produce and promote, and what are the particular merits of his appliance. It is of primary importance to the manufacturers that an early determination be made of utility sales policies. If the utilities can establish and follow a reasonably unified and well-balanced sales plan for a few years, it would be of tremendous help were manufacturers to undertake the extensive redesigning of appliances which the utilities now desire. If gas range designers are sufficiently smart, and manufacturers are able and willing to meet the development and production costs of new and superior designs, the proper percentage of the future cooking load will be retained by gas and be soundly justified by its fundamental advantages of speed, flexibility and economy. This cooking load also provides much assurance for securing and retaining the water heating load, and these two items constitute the backbone of domestic gas service.

Dealers in promoting any given type of appliances virtually control what the consumer buys. It is therefore our responsibility to make sure that the dealer has to offer the attractive and modern appliances that will keep public opinion in favor of gas.

Information on customers' opinions, supplemented with extensive performance experience, can best be supplied by the utilities' sales departments, home economics departments, service departments and testing laboratories. This association currently has a "Post-War Appliance Committee" whose report primarily summarizes an expression of customer preference, which, of course, can be of great value to manufacturers, but probably does not sufficiently cover the purpose of this committee for specific recommendations on appliance design. Likewise, the AGA Post-War Subcommittee on "Potential Markets" has a committee report on "customer preference." In view of the desire of our two associations to cooperate and coordinate their work on post-war planning, it appears appropriate to give consideration here of the points suggested by the AGA committee, and we in turn submit our suggestions to them.

These two extensive expressions of customer preference may well be taken as a reliable guide or directive as to the specific design recommendations which the utilities should present to manufacturers. The following is a composite summary of the combined PCGA and AGA committee suggestions, together with ideas of this committee but limited to points which have received the most weight, or which may be considered the most practical as shown in Table 2.

The incorporation of all of the suggestions in Table 2 would, of course, result in a super de luxe model, but there would also be the need to provide medium sized and priced models for which the major demand would exist. However, it appears that there is no good reason why most of the desirable operating features and attractiveness listed above cannot be included in our new model ranges. It is pro-

TABLE 1. SUGGESTED IMPROVEMENTS FOR CP RANGE DESIGN

A. Top Surface

Uniform level top surface with grids at same height, which do not wobble or cause kettles to slide off but still permit easy movement. One-piece top, neatly joining back with rounded corner for easy cleaning. A surface finish that does not quickly deteriorate, crack, craze or discolor from heat and use and with smooth grids. Investigations should be made as to the real desirability of top covers. If the top surface is sufficiently neat and attractive, covers may not be desirable. If top covers are used, they should move conveniently out of the way, without obstructing other parts of the range, and could be made to operate a valve to shut off the gas burners when covers are down. Sufficient top surface area and space between burners to accommodate four large utensils is desired by most cooks. Easily removable and cleanable drip pan should be provided. Well-located top surface light is needed.

B. Top Burners

Burners easily cleanable, preferably of bright or polished metal. Time or temperature control for one or more burners (to prevent burning of foods). Simmer burners which spread heat to avoid localized central hot spots. Reduced heat from pilot lights, easily serviced and relighted. Valves located away from hot zones; strong, smooth handles that do not come off easily, with safety latches. Valves readily serviceable.

C. Ovens

At least waist-high, large sized (at least 18 in.), with door window, reliable temperature indicator and interior light. Well insulated, with close-fitting door to prevent heat leakage and keep low exterior surface temperatures. Easily cleanable interior lining with minimum number of joints. Smooth, flat surface, bright finished, sliding racks that are rugged and do not wobble when drawn out to stop latches, adjustable to four or five positions. Quick temperature rise and good heat distribution for even baking. Separate small or pastry oven. Door springs located out of hot zone, or easily replaceable or no-spring counter-balanced door. Improved oven venting to carry away vapors, to optionally dispose of or utilize waste heat for kitchen warming or other purpose.

D. Broilers

Waist-high, with door window, drawer type, easy opening and rolling with stop, separate from oven. Well vented so as to be really smokeless. Bright metal (not enameled) drip pan, easily cleanable, with deep well for grease drainage. Grid adjustable to broil close to flame.

E. Accessories and General

Simplified controls, simplified clock setting. Easier servicing of controls, safety pilots, valves and piping. Electric oven ignition? *Very much better venting arrangements* for the oven, broiler and top surface; vent easily cleanable, neat and effective. Range to fit flush to wall and to floor with toe space. No exposed bolts or open joints; have rounded edges. Have choice of colors. Large, smooth bearing plates or feet to permit easy sliding on floor when necessary. Include warming compartment. Have model with deep well cooker and utensil which may be used as pressure cooker. Standardize dimensions and general designs to improve the all-gas kitchen "ensemble."

posed that a committee be formed to study thoroughly gas range designs and collaborate with manufacturers through their associates for the purpose of developing practical plans at an early date that will assure the gas industry of having ranges that will command customer preference.

2. Improvement of Gas Appliance Control Devices

The modern gas appliance calls for numerous safety and automatic devices for controlling its operation. While many of these devices have been relatively well perfected, there is still opportunity for further improvement and more standardization, particularly with respect to their installation in the appliance to facilitate servicing. Much improvement of controls can be obtained by not only better mechanical design but also by better selection of materials and more precision in manufacture.

A few years ago an outstanding innovation was made for gas ranges by the addition of the clock-controlled oven. Theoretically, this was fine, and it also proved to be an excellent selling factor. Practically, however, the complexity of the newer clock controls is such that housewives are confused with their operation to the point that they fail to set them properly, or do not use the clock at all. This is possibly one of the clearest and strongest examples of the need for simplifying controls. Another item in regard to time controls is that the housewife desires a longer period of operating alarm on such devices as the "minute minder."

Frequent suggestions are made for time, temperature or automatic shut-off of top burners, as many housewives consider this desirable for long-time cooking operations which are not being constantly watched. One factor to be considered with such an installation is the added cost, particularly if more than one burner was so controlled.

Thermostatic pilots for water heaters have been a rather serious source of trouble. Now, however, AGA approval requirements demand the use of "listed controls" and improvement of this difficulty is expected. Appliance manufacturers should realize that their entire appliance is blamed when a control fails, and it is therefore good policy to endeavor to select controls of maximum reliability.

In general, most of the improvement of controls may be obtained by better selection of materials and manufacturing methods to secure long-term satisfactory operation and better location and installation methods to facilitate servicing.

3. Standardization of Appliances and Promotion with Manufacturers of Complete Equipment for All-Gas Kitchens

Presently plans are being put forth by the electric industry for "all-electric kitchens" in packaged units, covering: ranges, water heaters, dishwashers, garbage disposal units, refrigerators, kitchen cabinets and the many small electric appliances, as well as washers and ironers. Such a coordinated and complete program is more readily possible in the electric than in the gas industry because such a preponderance of all kinds of electric appliances are made by the two largest manufacturers. It is not possible for any one concern of the gas appliance industry to cover the entire field. Therefore there is need for cooperative efforts for the standardization, so far as possible, of appliances made by various manufacturers in order that the kitchen group may form a harmonizing ensemble. Such a plan also opens the opportunity for the manufacture of smartly designed kitchen cabinets or cupboards in unit sections, which may be in heavy demand for post-war houses using much prefabricated material. Further, there is need for some standardization of each manufacturer's own models as a means of controlling and reducing production costs which will be a very important item in the post-war period when much of the mass purchasing power will be in the lower income brackets.

The Post-War Planning Committee of the AGA has recently submitted to the corresponding committee of the AGAEM a memorandum in support of the "Coordinated Kitchen Equipment Plan." This plan has already received the strong support of a number of utilities. The memorandum points out: the great potential post-war market of about 1,500,000 kitchen units per year; that the energy load to supply these appliances will be subject to strong electric competition; that the "package all-electric kitchen" now being featured in the advertising of the two big

electric manufacturing companies creates a form of competition which must be met effectively; that the availability to builders of this packaged electric unit makes it easy for this equipment to secure preference unless the gas industry can offer a similar proposition; a properly installed gas range is better than an electric range, but the sales advantages of this fact can be nullified by the adaptability of the coordinated electric equipment; that surveys show the American housewife has been given the idea that electric cookery is cleaner and cooler than gas, which is not necessarily true if the gas range is properly vented; the tremendous advertising power that the two big electric companies can lend to the "all-electric kitchen" and which needs to be matched by the gas industry; and, the importance of the domestic load to the gas industry.

The gas industry should be prepared to meet this competitive electric program by a unified plan to offer equipment of standardized dimensions and styles which will form harmonizing groups. Manufacturers should be interested, through a strong group of AGAEM members, in producing new appliances, such as dishwashers, sinks, cabinets, etc., to promote all-gas coordinated kitchen equipment which ties in with and supports our present major gas appliances.

It is proposed that the PCGA appoint a group to review the plan of AGA Post-War Planning Committee to interest AGAEM in the manufacture of coordinated units, and new appliances and equipment which will meet the electric kitchen program; and report to our directors any recommendations relative to sponsoring the coordinated appliance program.

3. Proposals for New Appliances

It seems an anomaly that the gas industry does not have an automatic dishwasher to offer to its customers. The dishwasher uses a substantial amount of hot water, preferably very hot water, in order to remove grease and to dry dishes. Power for operation of the washer need not necessarily be large, only sufficient to rotate dish trays, if a good volume of water at fair pressure is available. Possibly this power might be derived from the water and thereby make a fully independent gas appliance. It is urged that appliance manufacturers seriously study the possibilities of a "gas dishwasher" which might become a major unit of the all-gas kitchen. No one will question the trend toward worth-while labor-saving household devices, and this fact augurs well for the sales prospects for a good dishwasher.

Many proposals have been made for combination appliances, such as a range and water heater, an incinerator and water heater, or a refrigerator and water heater. Such proposals must be carefully weighed to determine their merits; is any real advantage gained by combining two units into one; can any worth-while economies be effected by utilization of waste heat, etc. Possibly the most likely combination is the range and water heater because of the appreciable amount of waste heat from top burners and oven which might be recovered; further it might be desirable from a convenience standpoint to have a limited supply of hot water at the range. Again, it may be advantageous to have a booster heater with the range, to further raise the temperature of the regular hot water supply for a dishwasher. Combined water-heaters would require direct as well as waste heat sources.

Reports from our committees on range improvements show the desire for time and heat control on top burners to prevent burning foods. Doubtless there is a field for such devices, possibly accomplished by special utensils. Also, a deep well cooker in the top surface has a certain public demand; this might be developed in combination with a pressure type cooker.

Gas range venting is a subject which until recently has received woefully little attention. Most cities have not had ordinances requiring the construction of proper or any vents in the kitchen walls to serve a range, and in those cities almost no ranges are vented. Much argument has been advanced that it was unnecessary to vent a range because its combustion products were harmless. These arguments have completely overlooked the question of desirable operating conditions, with the ultimate result that many customers have become displeased with gas cooking because of hot kitchens, and have been ready to accept the idea that an electric range assures a cool kitchen. Shortsightedness has worked against us. A *properly installed* gas range can produce a cleaner, cooler kitchen than an electric range and also provide an opportunity for kitchen heating when desired, and have the further advantage of about 50% lower operating costs. Inherently, the gas range is the best cooking appliance; its advantages should not be lost because of improper installation; therefore we must meet and excel our competitor in his top sales claim of "cool, clean kitchen."

Clean kitchens are primarily dependent upon the direct elimination of greases distilled from meats and other foods. The quantity of such grease is directly a function of temperature and not a function of the kind of energy used to produce that temperature. In broiling and frying, gas ranges usually cook the meat at higher temperatures than electric ranges, and frankly the customer wants this because of the superior result obtained. This, however, results in more distilled grease in the vent products, for which we should provide adequate arrangements for removing as close as possible to their source of production.

Adequate venting of the gas range, oven, broiler and even the top surface may be secured by properly designed range vents connected to a kitchen flue operating on natural draft if sufficient, or forced draft if necessary. Generally kitchen ventilating fans are of very little help because of the rapid condensation of greases upon the walls around the range before they reach the fan. Direct venting eliminates odors and heat, as well as the grease.

Wide variations of conditions occur according to individual kitchen cooking practice; at one house top burners are the principal use and at another house a great amount of roasting or broiling may normally be done when we are more fortunate in procuring meat supplies. The amount of gas energy in Btu.'s used by top burners is less than twice that used for electric cooking, whereas in the case of the gas oven the ratio is about three to one; because broiler and oven operations produce the preponderance of distilled grease, and the latter is usually a long period operation, ovens and broilers in particular should be vented. This recommendation, however, does not necessarily carry with it the idea that it is not important to vent the top surface. Without question the top burners are the ones most frequently used, although usually at lower heat input rates, but where boiling operations cause the emission of considerable quantities of water vapor from utensils and combustion products; therefore the venting of the top may well be considered very desirable.

With the public desire for level, smooth top ranges (not *closed* top), it is possible to vent much of the excess hot combustion products from the top burners and thereby create a flue draft which, with an elevated venting slot in the back plate of the range, may draw off considerable of the water vapor and thereby reduce steam condensation on walls and windows. Because of no flow of combustion products from an electric oven, it is practically impossible to obtain effective natural draft

venting. The maintenance of only constant baking temperature in a gas range oven is sufficient to raise the temperature of a small kitchen around 20°, whereas, under similar conditions, the electric oven would raise the temperature only one-third that amount.

It has been suggested that the surplus heat from gas ranges be utilized for kitchen warming during cold weather. This doubtless has good possibilities; however, there can easily be serious question raised against the delivery of such heat directly from the flue because that would completely revert the situation to a non-vented condition where the grease, odors and water vapor would tend to soil the kitchen. Preferably such surplus heat should be passed through a closed radiator system and thus used only to warm clean air as in a furnace. This method might require the use of a small electric driven blower.

Experience with kitchen ventilating fans indicates that, in designing an oven and broiler vent system, consideration should be given to the installation of a grease trap or filter which may be very easily removed and cleaned. Fans handling cooking vapors, even though highly diluted with air, accumulate much grease; exessive amounts in a flue would be most undesirable.

Several eastern gas companies (Rochester, Washington and others) have already done considerable work on this very important subject, and this topic has been extensively considered by the AGA Post-War Planning Committee. The question of clean, cool kitchens is no less important in the West, where we have more widespread competition from cheap hydro-electric power. It is therefore recommended that the committee to be appointed on improvements of gas utilization equipment make particular studies of range venting and endeavor to work in collaboration with the AGA committee and manufacturers dealing with this same subject, to the end that the desired range improvements can be achieved as promptly and effectively as possible.

AGA Post-War Planners Issue Marketing Report

Analyzing and evaluating some of the important factors and conditions which are likely to exist generally after Victory, the Subcommittee on Post-War Purchasing Power and Potential Markets of the Post-War Planning Committee of the AGA has issued its first report. The work has been undertaken for the purpose of providing each individual gas company with essential information to serve as a background and a guide in visualizing post-war conditions in its own territory and in helping the company to prepare in meeting them promptly and effectively.

Certain conditions within the industry indicate that it is vital that sales and promotional efforts be consolidated and united, and to that end, the Committee is giving consideration to three objectives:

1. To consolidate promotional and merchandising activities by endeavoring to get all utilities either to merchandise themselves or to assume responsibility for consolidation of dealer merchandising in their area so that a united sales promotional program can be developed.

2. To attempt to obtain industry-wide support as to the needed changes and types of equipment that the manufacturers should have available. In this direction efforts will be made to reduce to a minimum the number of models and individual company requirements.

3. To broaden and strengthen the national advertising program to further and develop the above two objectives.

The Committee urges that each gas company set up an organization and begin work on post-war planning in its territory. Responsibility for this should be assigned to the company personnel in charge of operations, advertising and sales promotion, utilization and servicing activities. It is suggested that the first efforts of the company post-war planning group should be to determine the business and general conditions that are likely to prevail in the community—both during the short term period that will follow Victory and during the longer post-war era—and to develop company plans to meet these conditions.

The Subcommittee of the general Post-War Planning Committee, headed by C. V. Sorenson, Northern Indiana Public Service Co., Hammond, Ind., has subdivided the general subject of its report into several topics as an aid to clarity and simplification. These cover probable business conditions and the post-war period, post-war spendable income, shifts in population and the effect on markets, probable post-war home building, post-war markets (gas home heating, gas refrigeration, gas water heating, gas cooking), and customer preferences.

Competitive factors have been ignored, the purpose of the study being to attempt to arrive at a reasonable estimate of purchasing power, from which markets can be estimated.

HOW PORTLAND GAS IS HELPING TO SPEED WAR PRODUCTION
The next plane you see
is likely to contain parts made by Columbia Aircraft Industries
GAS heat treating helps make these parts tough and durable . . .
Here is the story.
GAS supplies even, dependable heat
Why you are asked to conserve gas
GAS IS WAR MATERIAL Use it wisely!
Help the war effort by avoiding waste of GAS in your home
PORTLAND GAS & COKE COMPANY
3rd War Loan
BACK THE ATTACK

One of a series in Portland Gas & Coke Co.'s current series of "Gas in War Industries" advertisements appearing in newspapers in the Oregon area. The advertisements present factual information describing the processes and products of various Oregon war manufacturers—copper steam exhaust pipes, aircraft carriers, galvanizing, steam engines, etc. The gas company ties in by showing how gas is used in different operations to speed production. Of course, an urgent conservation message is a prominent segment in each ad. McCann-Erickson of Portland prepared the series.

CRACKING GAS ENRICHING OIL

Results of Laboratory Tests Run at Normal and Short Time Contact

THE purpose of the tests was to determine, if possible, whether gas enriching oil can be more completely gasified by cracking at higher temperatures and shorter time of contact than is used with present normal carbureted blue gas operation. If more complete gasification can be obtained it should result in an appreciable reduction in the amount of oil required to produce carbureted blue gas of a given heating value.

Arrangements were made with Brewer & Gardner, consulting chemists, Philadelphia, to make the tests.

Tests were made on only one type of oil. It was a fuel type that will most likely be available to gas companies in the East this coming winter. The sample tested was obtained from the Sun Oil Co. by Dashiell. It is representative of an oil with which considerable operating experience has been had and whose behavior, under normal plant operation, is well known. An analysis of this oil showed the following:

A. P. I. Gr. at 60° F.	17.8
Viscosity, Saybolt Furol at 122° F.	64 sec.
Sulphur	0.51%
Carbon residue	6.7%
Btu. per gal.	148,892
Btu. per lb.	18,859
Pounds per gal.	7.895

Hydrocarbon analysis was made by two methods:

A—The Mighill method.

B—A method used for many years in forecasting the enriching value of an oil from its division into four (4) classes of hydrocarbons.

The results of the two methods are as follows:

Olefins	34.0%	23.3%
Aromatics	27.3%	15.5%
Naphthenes	18.5%	11.9%
Paraffins	20.2%	49.3%

While either method can be used in forecasting the enriching value of an oil, the factors used are not the same for the two methods.

DISTILLATION TEST

Initial boiling point	408° F.
0.2%	450° F.
1.0%	500° F.
3.0%	550° F.
6.5%	600° F.
11.0%	650° F.
18.0%	700° F.
38.0%	750° F.
91.0% (end point)	765° F.

Cracking tests were made at 100° F. intervals from 1400° to 2000° F., inclusive. One set of tests was made with a time of contact of about 7 seconds, one set at about 0.7 second, and another at 1800-1900° and 2000° F. at about 0.3 second.

THESE TESTS were sponsored by the AGA Committee on War Activities. They were supervised by a committee consisting of P. T. Dashiell, vice president of the Philadelphia Gas Works Co., who represented the AGA, and Leon J. Willien, head consultant on manufactured gas for the WPB, representing the Manufactured Gas Division of the WPB.

Description of Cracking Unit and Method of Procedure: The cracking apparatus used in the test was described by I. B. Dick of the Consolidated Gas Co. of New York in a paper presented at the 1933 Production and Chemical Conference of the American Gas Association.

A flow sheet of the apparatus is given (Fig. 1).

Briefly, the test procedure is as follows:

Hydrogen is taken from a cylinder through a holder for constant pressure; through a flow meter for constant rate of flow; through a 1/10 cu. ft. wet test meter for measurement; then through an electrically heated vaporizing and cracking tube; at the same time oil is pumped into the tube and is vaporized and cracked during passage through it.

The carbureted hydrogen passes through a purifier to remove tar and H_2S; then through a 1/10 cu. ft. wet test meter for measurement, and then to a holder for storage.

At the completion of a run the heating value of the finished gas is determined with a Junkers calorimeter. Complete gas analysis is made with a Burrell gas analysis apparatus.

Btu. in finished gas minus Btu. in hydrogen used equals Btu. from oil.

Btu. from oil divided by gallons of oil used equals gas enriching value of oil in Btu.'s per gallon.

In the ordinary method of testing, hydrogen is passed through the apparatus at a rate of 3 cu. ft. per hour and the oil is pumped in at the rate of 32 cc. per hour; under these conditions the time of contact varies from 6 to 8 seconds.

In order to shorten the time of contact a silica plug was installed in the cracking tube of such size that it occupied 80% of the cracking area; at the same time the oil and hydrogen rates were doubled. Under these conditions the time of contact in the cracking tube was from 0.69 to 0.91 sec.

Another set of tests were made at 1800-1900° and 2000° F. with the plug in place and the hydrogen and oil rates increased to four times the normal rates. Under these conditions the time of contact was from 0.31 to 0.36 sec.

Fig. 2 shows the usual assembly of the cracking tube and Fig. 3 the assembly for short contact time.

The hydrogen used in the tests was analyzed with a Burrell gas analysis apparatus. The results showed a purity of 99.4%.

Results: Table 1 shows the results

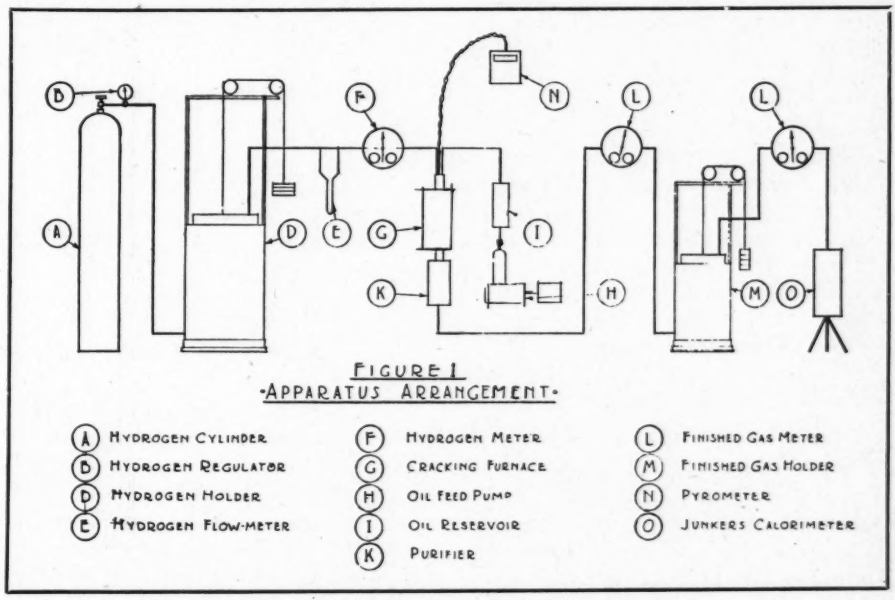


FIG. 1. Flow sheet of cracking apparatus.

TABLE I

1. *Cracking Temp. °F.*	*1400*		*1500*		*1600*		*1700*		*1800*			*1900*			*2000*		
2. Contact Time Seconds	7.93	.91	7.42	85	7.11	.80	6.76	.79	6.39	.73	.36	6.16	.77	.33	6.05	.69	.31
3. Cu.Ft. Oil Gas per Gallon	42.47	49.17	44.80	51.90	44.79	55.44	46.25	56.46	44.89	59.94	63.46	54.65	62.41	72.93	69.75	72.11	75.18
4. B.t.u. per Cu.Ft. Oil Gas	2264	1857	2246	1865	2245	1790	2132	1801	2114	1698	1576	1692	1609	1348	1274	1337	1319
5. B.t.u. per Gallon	96100	91300	100600	96800	100600	99300	98600	101700	94900	101800	100000	92500	100400	98300	88900	96400	99200
6. Per Cent Oil Gas in Finished Gas	10.60	11.97	10.96	12.49	10.96	13.06	11.26	13.44	10.87	13.93	15.36	12.97	14.51	16.83	16.35	16.62	17.02
7. Per Cent H_2 in Finished Gas	89.40	88.03	89.04	87.51	89.04	86.94	89.74	86.56	89.13	86.07	84.64	87.03	85.49	83.17	83.65	83.38	82.98
8. Tar Gallons per Gallon Oil	.274	.303	.247	.270	.247	.254	.259	.240	.280	.239	.250	.285	.248	.260	.317	.272	.255
Gas Analyses																	
9. CO_2	.4	1.7	0.0	.4	.8	.5	.3	.6	.3	.2	.6	.3	.4	.4	.3	.4	.6
10. Ills	6.6	7.4	6.8	8.2	6.1	8.2	4.3	7.9	3.1	7.4	8.1	1.5	6.8	6.1	1.0	4.9	5.7
11. O_2	.2	0.0	.4	0.0	.3	0.0	.2	0.0	.1	.2	.1	.5	.3	0.0	.4	.4	.3
12. H_2	80.0	84.5	78.6	82.9	76.6	81.6	75.6	79.7	76.1	79.6	80.4	76.5	78.7	81.4	78.6	79.7	82.0
13. CO	.1	.2	0.0	0.0	0.0	.2	0.0	.1	.2	.2	.2	.2	.2	.3	.2	.1	.3
14. CH_4	9.7	3.5	11.4	7.9	13.3	9.1	18.7	11.3	20.3	11.7	9.6	20.6	13.0	11.7	18.5	14.3	11.1
15. C_2H_6	1.9	2.6	2.6	.6	2.4	0.0	.3	.4	.1	.4	.8	0.0	.4	0.0	.3	0.0	0.0
16. N_2	1.1	.8	.2	0.0	.5	0.4	.6	0.0	0.0	.3	.2	.4	.2	.1	.7	.2	0.0

TABLE II

1. *Cracking Temp. °F.*	*1400*		*1500*		*1600*		*1700*		*1800*			*1900*			*2000*		
2. Contact Time Seconds	7.93	.91	7.42	.85	7.11	.80	6.76	.79	6.39	.73	.36	6.16	.77	.33	6.05	.69	.31
3. Finished Gas B.t.u.	524	503	529	512	530	509	526	518	514	512	513	496	506	493	474	486	490
4. B.t.u. per Cu.Ft. Ills	2120	2100	1770	2000	2340	1930	2180	1820	2200	1820	2070	3130	1735	1920	3400	1860	2070
5. Per Cent H_2 Absorbed	9.4	3.5	10.4	4.6	12.6	5.3	14.1	6.9	13.0	6.5	4.2	10.5	6.8	1.77	5.1	3.7	0.98
6. Per Cent Oil Gas	20.0	15.5	21.4	17.1	23.4	18.4	24.4	20.3	23.9	20.4	19.6	23.5	21.3	18.6	21.4	20.3	18.0
Oil Gas Composition																	
7. CO_2	5.0	6.5	0.0	2.3	3.4	2.7	1.2	3.0	1.3	.9	3.1	1.3	1.9	2.2	1.4	2.0	3.3
Ills	33.0	47.7	31.8	48.0	26.0	44.5	17.6	39.0	12.9	36.2	41.2	6.4	32.0	32 8	4.7	24.1	31.6
O_2	1.0	0.0	1.9	0.0	1.3	0.0	.8	0.0	.4	.9	.5	2.1	1.4	0.0	1.9	2.0	1.7
CO	.5	1.3	0.0	0.0	0.0	1.1	0.0	.5	.9	.9	1.0	.9	.9	1.6	.9	.5	1.7
CH_4	48.5	22.6	53.3	46.2	57.0	49.4	76.5	55.5	85.0	57.4	49.0	87.5	61.0	63.0	86.6	70.3	61.7
C_2H_6	9.5	16.7	12.3	3.5	10.3	0.0	1.2	2.0	.4	2.0	4.1	0.0	1.9	0.0	1.4	0.0	0.0
N_2	5.5	5.2	0.7	0.0	2.0	2.3	2.7	0.0		1.7	1.1	1.8	.9	.4	3.1	1.1	0.0
B.t.u. per Cu.Ft.	1353	1521	1311	1483	1370	1353	1170	1302	1144	1272	1419	1078	1201	1265	1053	1050	1277

of the cracking tests as submitted by Brewer & Gardner. Table 2 additional data developed from Table 1.

Items 3 to 7, inclusive, in Table 1 were calculated from the actual data collected during a test. For example, Item 7—"% H_2 in finished gas"—was calculated from the amount of H_2 metered before entering the cracking tube and the total amount of carbureted gas metered before entering the holder.

It is interesting to note that in every test the "% H_2 in the finished gas," as shown by Item 7, is higher than the per cent H_2 shown in the analyses of the finished gas. The difference between the "% H_2 in the finished gas, Item 7, and the per cent H_2" shown in the finished gas analyses should represent the H_2 absorbed by hydrocarbons formed in the oil cracking. The "H_2 absorbed" shown in Table 2 was calculated in this manner. Other items in Table 2 were calculated as follows:

The Btu. per cubic foot of the finished gas was calculated from Items 4, 6 and 7 in Table 1. These checked within less than 1% with the Btu. determinations made on the finished gas with a Junkers calorimeter.

The Btu. per cu. ft. of Ills. was calculated from the gas analyses in Table 1 and the calculated Btu. of the finished gas.

The percent of oil gas in the finished gas was calculated by subtracting the percent H_2 shown in the gas analysis in Table 1 from 100. This includes the H_2 absorbed.

The composition of the oil gas was calculated from the gas analyses in Table 1. It was assumed that the oil gas contained no H_2 since the results indicate that H_2 was absorbed in every test; hence, no H_2 was produced from the oil. To determine the composition of the oil gas, all the constituents shown in the gas analysis, except the H_2, were divided by 100—H_2.

The Btu. per cu. ft. of the oil gas was calculated from the composition

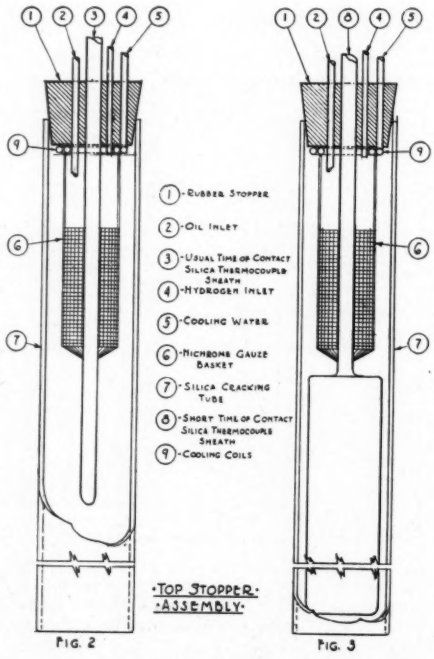


FIG. 2 (left): Usual assembly of cracking tube. FIG. 3 (right): Assembly of cracking tube for short-time contact.

using the calculated Btu. of the illuminants.

A maximum enriching value of 100,600 Btu. per gal. was obtained at 1500 and 1600° F. with the normal time of contact, about 7 sec. With a time of contact of 0.7 sec., a maximum of 101,800 Btu. per gal. was obtained at 1800° F. At 0.3 second time of contact, a maximum of 100,000 Btu. was obtained at 1800° F.

The cu. ft. of oil gas per gal. (Table 1, Item 3) increased with a reduction in the time of contact. The Btu. per cu. ft. of oil gas (Table 1, Item 4), however, was lower.

There was less H_2 absorbed at the shorter time of contact.

The tar production was remarkably uniform at all temperatures and time of contact.

The percent of oil gas shown in Table 2 is higher than that shown in Table 1. The percent in Table 2 includes the H_2 absorbed, while Table 1 does not.

1. That the maximum enriching value obtained was approximately the same regardless of the time of contact; the only difference being that the maximum value, with the short time of contact, was obtained at a higher temperature.

2. That the percentage of illuminants in the gas, as the point of maximum enriching value, is approximately the same with a long time of contact as with a short time of contact. This checks with a theory developed from actual operation, that the maxi-

mum enriching value is obtained when the maximum amounts of aromatic hydro-carbons are produced. It is probable that this maximum can be obtained with low temperature and long time of contact or high temperature and short time of contact, when working within a temperature range of about 1300° F. to about 2000° F.

3. That the fact that the tests show H_2 absorbed in each test, it may be reasonable to assume that no carbon was formed. If this is true, cracking oil in an atmosphere of pure H_2 apparently has a different effect than cracking in an atmosphere of blue gas. We know from experience that if an oil is cracked at 1800 to 2000° F. in a carbureted blue gas machine, carbon will be formed. It will not be formed in objectional quantities, however, if the time of contact be made relatively short, or, if a large amount of excess steam is present. While it is true that if carbon was formed in some of these tests, it was included in the tar produced. However, examination of the cracking unit showed little or no signs of carbon. A test was attempted at 2100° F. and 0.3 second time of contact, but it was impossible to complete the test due to the cracking tube plugging up with carbon.

P. G. and E. Will Supply 2,400,000 cu. ft. Daily To New California Vegetable Dehydration Plant

A HUGE new vegetable dehydration plant ranked by its builders as the largest in the world now is in full operation at Salinas, Monterey County, Calif. It is the project of the Spiegl Foods Co.—a nationally known organization which, under the name of the E. H. Spiegl Co., ran a big lettuce packing establishment at Salinas for 15 years. The new undertaking was prompted by war needs and the entire output goes to America's armed forces or to allied countries receiving supplies under the Lend-Lease Act.

This great plant employs 925 men and women and dehydrates several hundreds tons of fresh vegetables a day—the exact amount is a military secret. It will operate 12 months a year and will handle only carrots and cabbage—carrots from about the middle of March to December and cabbage the rest of the time. Right now it is dehydrating carrots—so many that the water evaporated from them totals more than 70,000 gal. daily.

Natural gas and electricity, both furnished by the Pacific Gas and Electric Co., San Francisco, are used very extensively in the Spiegl plant. At capacity operation the gas consumption is 2,400,000 cu. ft. a day—more than enough to serve 18,000 average homes. The connected electric load is approximately 1000 hp.

Gas does the all-important job of heating the dehydrated tunnels—does it so satisfactorily that E. H. Spiegl, the owner, agrees with the statement of Dr. W. V. Cruess, professor of fruit technology and chemist in the Agricultural Experiment Station at the University of California, that:

> "Gas is very efficient and 100% of the heat is applied to drying, without any losses. It is clean and burns without odor. It is especially convenient—available whenever desired and easily shut off the moment it is no longer needed."

Gas also fires 10 100-hp. boilers that provide steam for blanching the vegetables, for sterilizing equipment and for other purposes.

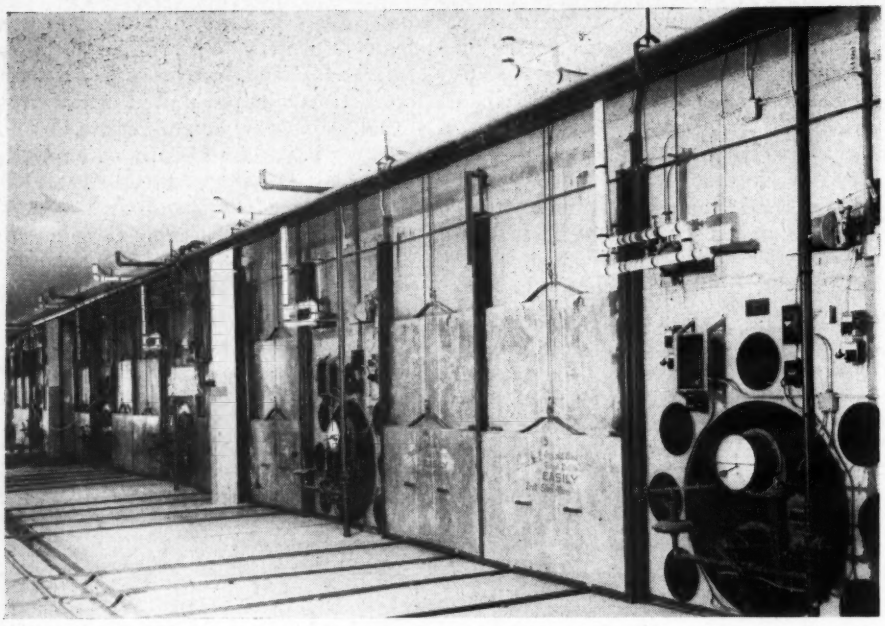
Electricity drives all the machinery in the place, operates numerous conveyors and performs other tasks to speed and simplify operations.

The new establishment adjoins the former lettuce packing house and is five or six times as large—and the original structure is 120 ft. square. The dehydration plant includes the old building and makes use of its famous "merry-go-round," which enabled a full crew to trim, clean, grade, crate, ice and load a railroad car of lettuce in 20 minutes. The device consists of a revolving circular conveying system, 360 ft. in circumference, and it now carries a steady stream of carrots past a long line of workers, who cut off the tops and tips as the first preliminary to dehydration.

The Spiegl plant features two-stage dehydration. That is, it dehydrates the vegetables in two stages, in primary and then in secondary drying tunnels. There are 24 tunnels—eight primary and 16 secondary—each 45 ft. long, 6½ ft. wide and 6½ ft. high. The diced vegetables move through them in trays loaded on small cars that run on tracks. Each car carries 40 trays, in two stacks of 20, and each tunnel holds 12 cars.

In the primary tunnels the diced carrots remain for two and a half hours in a temperature of 185°, which takes out 75% of the moisture. To

Workers on the "merry-go-round" trimming carrots.



Some of the 24 dehydration tunnels.

leave them longer in such heat would scorch them instead of completing the dehydration, so the job is finished in the secondary tunnels where the carrots remain for six hours in a temperature of 158°. This double process, says Spiegl, assures perfect dehydration and an improved product.

Operations in the Spiegl plant are thoroughly streamlined.

The carrots, minus their green tops, are brought in on trailers, some of which carry eight tons and some four tons. They are unloaded onto a 27-ft.-wide conveyor, somewhat like a treadmill, which carries them to the merry-go-round. As this device revolves slowly the carrots are topped and tipped, after which they are conveyed to a series of three high-pressure washers where they are thoroughly cleansed in cold water. Next they go to peelers, in which the skin is taken off by a 5% solution of lye and boiling water. Another high-pressure washing removes all traces of the lye and particles of skin, following which they are conveyed to women who inspect them for imperfections and cut the largest of them into two or three pieces in preparation for dicing.

Automatic machines dice the carrots into pieces 3/8 in. square and these go to a vibrating device that scientifically spreads them on trays, 2¼ lb. to a square ft. One these trays they take an 8½-min. trip through one of 12 blanchers—long steel boxes that are fed with a continuous flow of steam that maintains a temperature of 212° within them. From the blanchers they go to the primary tunnel and then to the secondary tunnel. After the dehydration process is complete they pass over a shaker that removes fine particles, are given a careful inspection and then travel to an automatic machine that weighs them into 5-gal. cans. These go to a special mechanical device that draws out the air and replaces it with carbon dioxide to preserve the contents. Lastly the cans are sealed and are ready for shipment.

Activities in the record-breaking establishment are directed by three key men—Spiegl, the owner; Leo Maller, plant manager, and Fred S. Peters, superintendent of operations.

Otter Tail Power Buys North Dakota Companies

The Federal Power Commission has given permission to Otter Tail Power Co. of Fergus Falls, Minn., to buy gas and electric facilities in North Dakota belonging to the Central Electric and Telephone Co., whose headquarters are at Sioux Falls, S. D.

The Otter Tail company was also authorized to issue unsecured notes to borrow money to pay for the facilities, and to renew its existing indebtedness to certain banks.

Under the order, Otter Tail is authorized to acquire electric facilities in 18 communities, an electric generating plant at Westhope, a generator at Cooperstown and a gas manufacturing plant and distribution system in Jamestown, all in North Dakota.

The order said the purchase price was to be a cash consideration of $400,000, plus the appraised value for materials, supplies and merchandise, and at the rate of 95% to 100% of face amounts for accounts receivable and unbilled electric accounts.

■ ■

Lone Star Gas Sells El Paso Property to Southern Union

A contract has been signed by Lone Star Gas Co. for the sale of its El Paso properties to Southern Union Gas Co. for $2,700,000, including materials and supplies on hand, and accounts receivable. This contract results from the agreement made by Lone Star with the Securities and Exchange Commission for disposal of its distribution system in El Paso and Galveston as part of the reorganization of the company effected last January. D. A. Hulcy, Lone Star president, and C. H. Zachry, Southern Union executive vice president, signed the agreement. Price of the Galveston property was $2,383,000.

Sealing cans of the finished product for shipment.

ASSOCIATIONS

AGA CONVENTION HIGHLIGHTS

By ELLIOTT TAYLOR
Washington Editor

THE twenty-fifth annual meeting of the American Gas Association in St. Louis on October 26th to 28th found more than a thousand industry representatives present, pondering gravely what the position of gas would be during the next quarter century and working together to lay active plans for the immediate post war years of that climaxing era. Of the scores of papers and addresses presented all yielded some contribution to these highlights:

Electric Competition: Electricity looms as the great potential rival for the post war cooking and water heater load, and the delegates were reminded that right now this alert and formidable competitor is out-advertising the gas industry by a score of at least eight to one in national magazines, with gas cooking not even a good also-ran in the field of radio presentation.

Home service, once the condescendingly patronized preoccupation of a handful of earnest females, was lauded by executives and observers as the Jeanne d'Arc of the industry's fight against consumer lassitude and war time indifference.

Sales and Appliance Design: More than a few gas companies are in one way and another trying to find out the appliance likes and dislikes of the American housewife: and with present returns incomplete there is an indication that over 50% of the homemakers of the nation want a gas range that looks like a gas range, that has an oven high enough for a full grown brunette to look into and with rounded corners that can be kept clean without the full time service of an Oriental or Negro domestic.

Somebody has to sell the appliances, and whether or not it is to be the gas companies is not as important as that the gas companies take the leadership in seeing that they are sold and sold right. If appliance manufacturers are going to lay their plans with an eye to developing new and better gas appliances they must have the assurance now that the utilities are formulating individual merchandising programs, geared to local conditions, that will guarantee an immediate and an effective presentation of their offerings.

Many manufacturers of gas utilization equipment are business philanderers at heart, sampling the devotion of one industry and then another, but the gas companies are wedded to gas for life. So the utilities want a finger in the pie when it comes to the design and specifications of the all important appliances and equipment that use their fuel; and they think broadening the scope of the AGA Testing Laboratories to include applied as well as fundamental research will provide the means.

Natural gas men, having brooded long over their minor administrative position in the American Gas Association as a section on a par with branches devoted to accounting, residential, industrial and technical problems, presented a mild reorganization plan for AGA that will divide industry jurisdictions into two equal divisions, one manufactured and the other natural gas. Alert to any proposals that appear to affect its likelihood of continued service to the entire gas industry, AGA received the natural gas proposals with understandable lack of opposition.

Government and Business: War administrative agents, as distinguished from political poltroons, are appreciative of the outstanding record that gas has chalked up among all utilities paying their obligations to the war effort. PAW and WPB representatives gracing the program, diligently divulged that the war is far from won, urged still greater effort on behalf of the voluntary conservation program of OWU that, thanks to the non-cooperation of the electrical and coal industries, is fast slipping out of the class of voluntary endeavor, heading toward mandatory restrictions.

NEW AGA OFFICERS FOR 1943-1944

President: Ernest R. Acker, president, Central Hudson Gas & Electric Corp., Poughkeepsie, N. Y.

Vice President: J. French Robinson, president, The East Ohio Gas Co., Cleveland, Ohio.

Treasurer: J. L. Llewellyn, insurance manager, the Brooklyn Union Gas Co., Brooklyn, N. Y.

Directors (two-year terms): F. M. Banks, vice president, Southern California Gas Co., Los Angeles; Walter C. Beckjord, executive vice president, Columbia Gas & Electric Corp., New York; C. M. Cohn, president, Consolidated Gas Electric Light & Power Co. of Baltimore, Baltimore, Md.; Watson E. Derwent, vice president, Geo. D. Roper Corp., Rockford, Ill.; R. L. Fletcher, vice president, Providence Gas Co., Providence, R. I.; D. A. Hulcy, president, Lone Star Gas Co., Dallas, Texas; E. P. Noppel, Ebasco Services, Inc., New York; Bruno Rahn, president, Milwaukee Gas Light Co., Milwaukee, Wis.; Louis Ruthenburg, president, Servel, Inc., Evansville, Ind.; E. J. Tucker, director and general manager, Consumers Gas Co. of Toronto, Toronto, Canada; H. Carl Wolf, president, Atlanta Gas Light Co., Atlanta, Ga.

Accounting Section: Chairman, O. H. Ritenour, Washington Gas Light Co., Washington, D. C.; vice chairman, C. E. Packman, Middle West Service Co., Chicago.

Residential Section: Chairman, C. V. Sorenson, Northern Indiana Public Service Co., Hammond, Ind.; vice chairman, J. H. Warden, Oklahoma Natural Gas Co., Tulsa, Okla.

Industrial and Commercial Gas Section: Chairman, Charles G. Young, Springfield Gas Light Co., Springfield, Mass.; vice chairman, Harry K. Wrench, Minneapolis Gas Light Co., Minneapolis, Minn.

Manufacturers Section: Chairman, Malcolm Leach, Glenwood Range Co., Taunton, Mass.

Natural Gas Section: Chairman, R. E. Wertz, Amarillo Gas Co., Amarillo, Texas; vice chairman, R. H. Hargrove, United Gas Pipe Line Co., Shreveport, La.

Technical Section: Chairman, Charles F. Turner, The East Ohio Gas Co., Cleveland, Ohio; vice chairman, L. E. Knowlton, Providence Gas Co., Providence, R. I.

AGA Delegates Meet to Ponder . . .

1. **R. E. Wertz,** chairman, Natural Gas Section, Amarillo Gas Co., Amarillo, Texas; **Ray Conner,** AGA Testing Laboratories, Cleveland; **Elroy Payne,** president, PCGA, Payne Furnace & Supply Co., Inc., Beverly Hills, Calif.

2. **Alexander Forward,** AGA, New York; **H. Carl Wolf,** Atlanta Gas Light Co., Atlanta; **L. Wade Childress,** The Laclede Gas Light Co., St. Louis; **Ernest R. Acker,** Central Hudson Gas & Electric Corp., Poughkeepsie, N. Y.

3. **Norman McKee,** Southern Counties Gas Co., Los Angeles; **J. W. Reed,** Cooper-Bessemer Co., New York; **J. W. Dunn,** American Recording Chart Co., Los Angeles.

4. **C. M. Johansen, J. M. Elliott** and **W. H. Ligon,** all of Atlanta Gas Light Co., Atlanta.

INSET: **Harry K. Wrench,** Minneapolis Gas Light Co.

5. **W. M. Jacobs,** Southern California Gas Co., Los Angeles; **O. R. Doerr,** Pacific Gas & Electric Co., San Francisco; **R. G. Barnett,** Portland Gas & Coke Co., Portland.

AT LEFT: **J. W. McEldeny,** Atlanta Gas Light Co., Augusta, Ga.; **Maurice White,** Mobile Gas Service Corp., Mobile, Ala.; **Blanchard Smith,** Chaplin-Fulton Co., Pittsburgh; **S. R. Walker,** Southern United Gas Co., Fort Smith, Ark. AT RIGHT: **Taylor Nelson,** Titan Valve & Mfg. Co., Cleveland; **Harold L. Gaidry,** New Orleans Public Service Co., New Orleans; **John Van Norden,** American Meter Co., New York; **E. T. Howard,** General Controls, Glendale, Calif.

. . . the Problems of War and Peace

1. **John A. Penote,** The Cleveland Trencher Co., Cleveland; **W. E. Derwent,** Geo. D. Roper Corp., Rockford, Ill.; **W. T. Rasch,** Security Mfg. Co., Kansas City; **George S. Jones, Jr.,** Servel, Inc.

2. **W. F. Rockwell,** Pittsburgh Equitable Meter Co., Pittsburgh; **J. A. Krug,** Office of War Utilities, Washington, D. C.; **Arthur F. Bridge,** Southern Counties Gas Co., Los Angeles.

3. **M. B. Reynolds,** Reynolds Gas Regulator Co., Anderson, Ind.; **Ed C. McLean,** National Machine Works, Chicago; **Floyd Gaunt,** Reynolds Gas Regulator Co., Anderson, Ind.; **E. R. Myhre,** General Gas Light Co., Kansas City.

4. **A. W. Gauger,** Pennsylvania State College, State College, Pa.; **Gladys Hanshaw,** AGA, New York; **D. P. Hartson,** Equitable Gas Co., Pittsburgh.

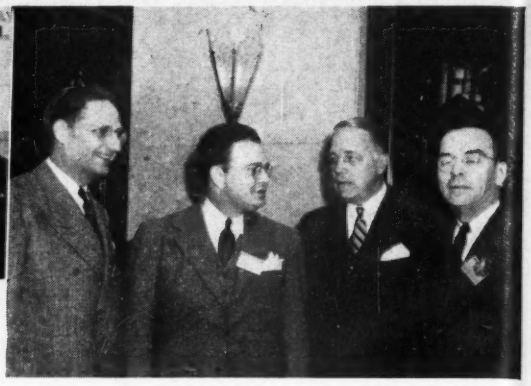
INSET: **Burt R. Bay,** chairman, Natural Gas Dept., Northern Natural Gas Co., Omaha, Neb.

5. **R. W. Stafford**, Connelly Iron Sponge & Governor Co., Chicago; **M. K. Wrench,** Metropolitan Utility District, Omaha, Neb.; **George B. Johnson,** Minneapolis Gas & Electric Co., Minneapolis.

AT LEFT: **Leon Ourusoff,** Washington Gas & Light Co., Washington, D. C.; **J. E. Woodall,** A. O. Smith Corp., Milwaukee, Wis. CENTER: **L. R. Mendelson,** Hotstream Heater Co., Cleveland; **W. B. Bentley,** Titan Valve & Mfg. Co., Cleveland; **W. G. Cartter,** Day & Night Mfg. Co., Monrovia, Calif. AT RIGHT: **J. F. Merriam,** Northern Natural Gas Co., Omaha; **Ray L. Harrison,** Peoples Natural Gas Co., Omaha.

James I. Gorton, Wortman, Barton & Goold, New York; **D. D. Foster,** Pittsburgh Equitable Meter Co., Pittsburgh; **A. C. Cherry,** Cincinnati Gas & Electric Co., Cincinnati.

H. A. Kahler, Sprague Meter Co., Oklahoma City; **F. L. Fairchild,** Sprague Meter Co., Bridgeport, Conn.

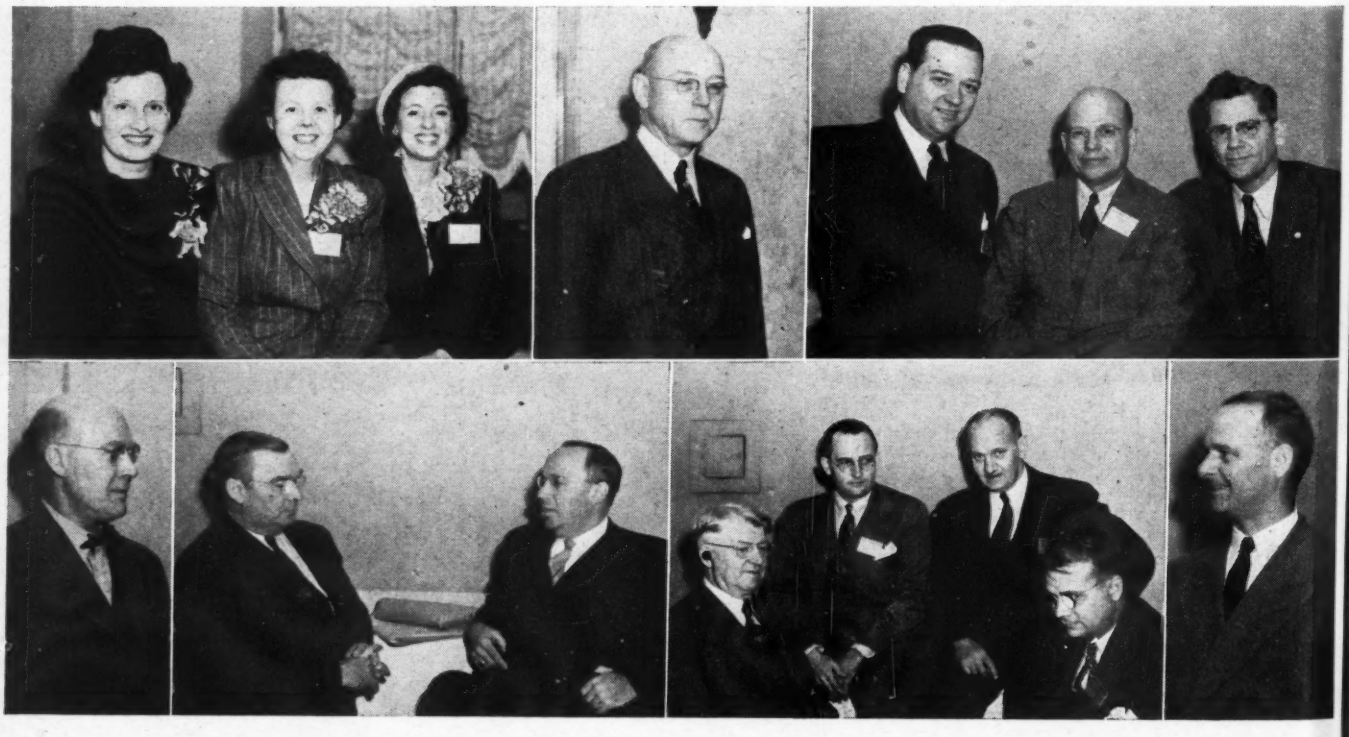


R. A. Hendrickson, Crane Co., Chicago; **S. A. Taylor,** Panhandle Eastern, Kansas City, Mo.; **George H. Smith,** WPB, Washington, D. C.; **D. J. Fagin,** Laclede Gas Light Co., St. Louis, Mo.

If industry, not just the gas industry but all industry, is to regain the control over the economic direction of America it must have formulated, well in advance of their immediate necessity, plans to recreate the mass employment that liberate purchasing power commensurate with the boom time buying of the war era. To the gas companies this means more than reemployment of their own returned veterans; it means an average of 20% more employees than were employed on the day of the fateful hour of Pearl Harbor.

Thus the AGA discussed, deliberated and debated the questions that are of immediate concern to the officers, executives and employees that comprise its membership. The spirit of mutual congratulations that has marked industry conventions in past years yielded the right of way to sharp but constructive self-criticism and any signs of complacency were conspicuously absent.

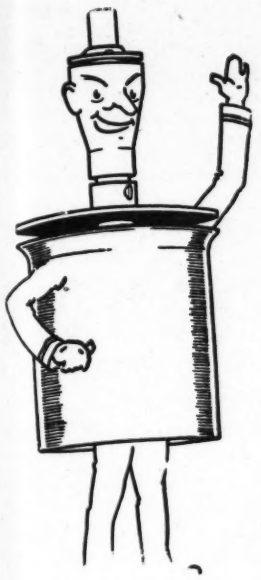
Presidential Address: In his presidential address, Arthur F. Bridge, vice president and general manager of the Southern Counties Gas Co., summed up briefly the 25 years of industry progress since the organization, during World War I, of the AGA. In that time natural gas "has grown from an infant of 2,500,000 customers in 1918 to 3,500,000 customers in 1943." Urging the necessity for a modification of the excess profits tax laws to afford relief to natural gas systems that are exhausting their irreplaceable reserves, he pointed out that while "natural gas marketed by public utilities in 1943 will show an increase of 58% over the immediate pre-war period . . . the indicated unit net income of the natural gas industry, after taxes for 1943, is



ABOVE (at left): **Mercedes B. Bates,** Southern California Gas Co., Los Angeles; **Jessie McQueen,** American Gas Association, New York; **Mrs. Margaret Crooks,** Iowa Illinois Gas & Electric Co., Rock Island, Ill. CENTER: **Harry L. Masser,** Southern California Gas Co., Los Angeles. AT RIGHT: **Hy Byrd, C. H. W. Burnham, O. W. Morton,** all of Panhandle Eastern Pipeline Co., Kansas City.

BELOW (at extreme left): **E. J. Boothby,** Washington Gas Light Co., Washington, D. C. AT LEFT: **E. Holley Poe,** Petroleum Reserve Corp., Washington, D. C. **A. M. Beebee,** Rochester Gas & Electric Co., Rochester, N. Y. AT RIGHT: **C. W. Moffett,** Natural Gas Odorizing Co., Baton Rouge, La.; **George W. McFadden,** Ohio Foundry & Mfg. Co., Steubenville, Ohio; **Richard E. Cleary,** Homestead Heater Co., Newark, N. J.; **C. E. Gill,** Natural Gas Odorizing Co., Chicago. AT EXTREME RIGHT: **F. M. Banks,** Southern California Gas Co., Los Angeles.

"We're Busy NOW"



Manufacturing:

John Zink Burners for Plants making 100 Octane Gasoline, Toluene, Styrene, Butadiene, Magnesium, Aluminum . . . and many other Warfare Products and . . .

JOHN ZINK FLOOR FURNACES
for Defense Housing Projects
ONLY.

BUT

. . . after the war we shall again manufacture that AMAZING—

JOHN ZINK FLOOR FURNACE

FOR EVERYBODY!

Complete foundry, specializing in small complicated iron castings.

"JOHN ZINK PRODUCTS MUST BE GOOD"

Write for Specifications

JOHN ZINK COMPANY

Tulsa, Oklahoma

NEW YORK • LOS ANGELES • DETROIT • SAN FRANCISCO

approximately 30% less than for the pre-war base period 1936-39." On income tax problem President Bridge observed: "Possibly the gravest potential threat to the financial stability of public utilities . . . is a disposition . . . on the part of certain Federal regulatory agencies, to disallow as operating expenses such (income) taxes above the prewar level."

National Advertising: Numerous speakers spoke either at length or in passing on the subject of national advertising. H. Carl Wolf, chairman of the Committee on National Advertising and president of the Atlanta, Ga., Gas Light Co., spoke of the coming year 1944 as a new plateau for business, the start of "a dynamic competitive economy" in which every industry and every company will strain to the utmost to present its message to the maximum number of customers and potential customers for its products. Public relations are what others think of us, advertising is what we think of ourselves; the function of advertising should be to make these two lines of opinion merge so that in the end the same opinion prevails on both sides.

Frank Smith, president of the Houston Natural Gas Co., and himself a staunch exponent of bigger and better advertising programs for the industry, delivered one of the memorable papers of the convention. Urging the industry to set its mark at a $4 million advertising campaign, rather than the present half million dollars effort, he nevertheless cautioned: "I have lost patience with some of the pictures painted of the fantastic futuristic world of tomorrow . . . I consider advertising ill advised that carelessly pictures wild and weird dream world products without factual foundation."

Post-War Thoughts: A notable contribution to post-war considerations was made in the course of a brief address by Frank H. Adams, chairman of the Post-War Planning Committee of the Association of Gas Appliance and Equipment Manufacturers and vice-president and general manager of Surface Combustion, Toledo, Ohio. Distinguishing between the era of cessation of European hostilities, with the defeat of Germany, and the ultimate world peace that will follow the downfall of Japan, he pointed out the necessity for progressive chronological plans geared to the several distinct periods that will thus arise. Each manufacturer must gear his plans to the products he will be able to offer out of the limited materials that will gradually become available in the early post-war period. Dangers ahead for industry in its consideration of a return to the free economy of the past were listed categorically by the speaker as:

(1) complacency, the feeling that there will be an automatic market for almost anything that is offered for sale.
(2) inability to throw off the reliance on government for advice and direction.
(3) apprehension over the possible ends of the uncharted course that management and labor will have to follow and
(4) confusion in thought and action caused by economic and social changes.

Stressing again the necessity of starting now, Mr. Adams laid down three points that should guide the utilities in their planning; first, that they set up a time table of proposed action now; second, that they start consumer conditioning now, and finally that they start post-Hitler, pre-V day plans now.

War Activities: Incoming president of AGA, Ernest R. Acker, president of Central Hudson Gas and Electric Corp., Poughkeepsie, N. Y., has been chairman of the association's important committee on war activities. Summarizing these activities, Chairman Acker said: "Gas has met every war requirement in full; some new developments necessitated by war restrictions may well result in permanent benefit to the industry; the gas industry has been convinced of the fair mindedness of the government officials in war agencies with whom its members have had dealings; the industry must push the utility conservation campaign of OWU to the utmost and it must be prepared to operate with further decreases in personnel if military demands make such operation necessary.

Natural Gas Proposal: J. French Robinson, newly elected vice-president of the Association and president of the East Ohio Gas Company, Cleveland, presented to AGA the report of his reorganization committee, representing the natural gas interests. Under the scheme, if adopted, AGA will be divided into two sections of equal standing, one composed of natural gas and the other manufactured gas members. Two vice-presidents will be elected annually, one from each section, and it will become an association policy to advance in alternating years, first a natural gas man and then a manufactured gas man to its presidency.

Due to the uncertainties of the present war, the time and place committee, chairmanned by R. G. Barnett, vice-president and general manager of Portland Gas and Coke Co., Portland, Ore., made no recommendations as to the next annual meeting, leaving the matter up to the discretion of the directors.

Acker Doubly Honored at AGA Meeting

Doubly honored by the gas industry at the AGA Annual Meeting was **Ernest R. Acker,** president of the Central Hudson Gas & Electric Corp. He was elected president of the Association.

E. R. Acker

He received the Charles A. Munroe Award for having made the most outstanding recent contribution toward the advancement of the gas industry.

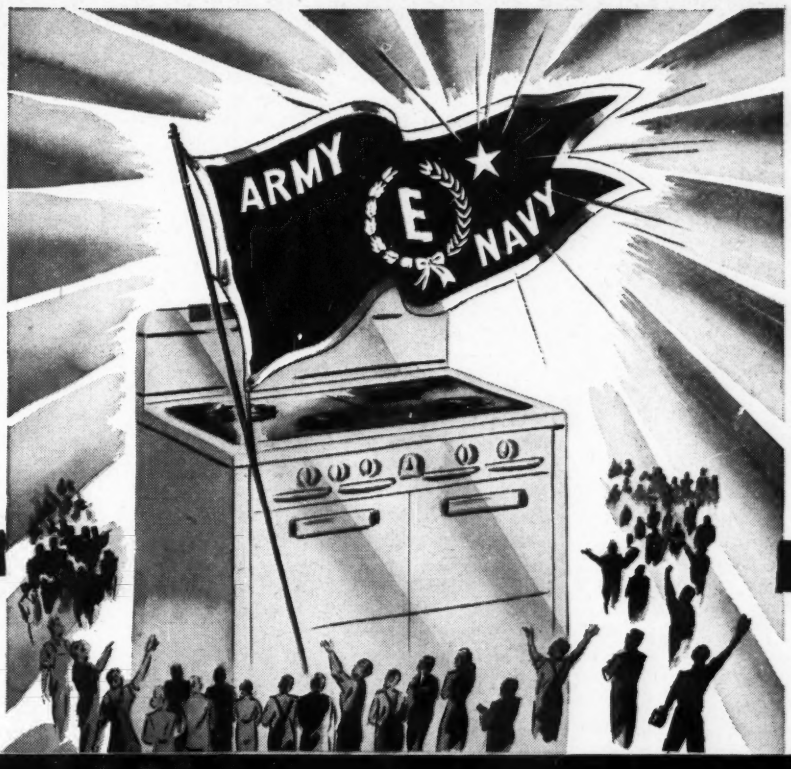
This is the first time in the history of the association that any individual has received both honors in the same year. The Charles A. Munroe Award consists of a substantial financial acknowledgment and engrossed certificate. The first such award was made in 1929. Presentation of the award was made by retiring President Bridge.

The 1943 award was made by a committee composed of Frank H. Lerch, Jr., president, Gas Companies, Inc., New York, N. Y., Chairman; George S. Hawley, president, Bridgeport Gas Light Co., Bridgeport, Conn.; and James F. Pollard, president, Seattle Gas Co., Seattle, Wash. The recommendation was approved by the Association's Executive Board.

Acker was graduated from Cornell University, class of 1917. Prior to graduation, he served for short periods as a special apprentice at the New York Central Shops, Harmon, N. Y., and as a cadet engineer with the Yonkers Electric Light and Power Co., Yonkers, N. Y. Immediately after graduation, he was employed at the Bethlehem Steel Co., entering the Engineer Corps of the United States Army as a Second Lieutenant in Sept., 1917. He served overseas as First Lieutenant, Chemical Warfare Service, until the end of the war.

Upon his return to the United States, Acker became identified with the Central Hudson Gas & Electric Co. in 1919 as a cadet engineer in the general operating department. He was made general superintendent of the Kingston Gas & Electric Co.—at that time a unit of the Central Hudson System—in 1921, and held that position until he was appointed general commercial manager of the Central Hudson Gas & Electric Co. in 1925. In 1932 Acker became president and general manager of the Central Hudson Gas & Electric Corp., succeeding the late Thaddeus R. Beal.

He has served as vice-chairman of the Commercial Section of the American Gas Association in 1929, chairman of the section in 1930 and member of the advisory council, 1931. In 1938 he became Treasurer of the Association, serving in this capacity until 1942, when he became Vice-President. He has acted as Chairman of the Committee on War Activities from January, 1942, to the present time.



ROPER
Presents a New Star for '43

An ideal booklet for distribution to your customers. It tells them how to use their present gas range to greatest advantage—what to do to make it last. Free sample will be sent upon request. Quantities —$1.00 per hundred.

Out of 58 years' experience, in making "America's Finest Gas Range," a New Star is Born at Roper. Six months ago the men and women of Roper received the Army-Navy Production Award. Now a White Star has been added to Roper's "E" burgee, as a symbol of continued high quality and quantity of war production.

Gaining this coveted award was not mere happenstance. On the contrary, it has its roots firmly embedded in a company background 58 years old. During that period the skill and loyalty of Roper employees made the name Roper significant of the finest in gas ranges.

When war broke out, that skill, loyalty and determination of purpose were quickly converted to reaching new goals in the production of war materials.

Records were made—and records were broken. They will continue to be broken again and again until the unconditional surrender of aggressor nations is secured. Then war-born manufacturing experience will find expression in an improved Roper gas range for a peace-loving America.

Sell WAR BONDS Now
The ROPER (LP) GAS RANGE Later

GEO. D. ROPER CORPORATION

GENERAL SALES OFFICE AND PLANT • ROCKFORD, ILLINOIS

ROPER GAS RANGES FOR ALL GASES INCLUDING (LP) LIQUEFIED PETROLEUM GAS

A. V. Smith Wins Beal Award for Corrosion Study

A. V. SMITH, consulting engineer of Philadelphia, Pa., was awarded the Beal medal Oct. 28 during the AGA annual meeting in St. Louis, Mo. Smith received the medal for contributing the best technical paper to meetings of the association throughout the year.

A. V. Smith

Presentation of the award was made by Ernest R. Acker, president, Central Hudson Gas & Electric Corp., Poughkeepsie, N.Y., representing the family of the late W. R. Beal, who established the award in 1897. It consists of a bronze medal and substantial cash payment.

Smith was honored for a paper on "Cathodic Protection Interference" which he presented at the Distribution Conference in Cincinnatti, Ohio, April 29-30. In this paper, Smith made a comprehensive and valuable contribution to the problem of cathodic interference. He described and illustrated the effect of anodes and gave actual data for tests made to show the effects of cathodic interference.

Smith has had a distinguished career as an electrolysis engineer. On Oct. 16, 1922, shortly after receiving his education at Renssaelaer Polytechnic Institute, he was employed by the New York Edison Co., New York (now a part of Consolidated Edison Co. of New York, Inc.) as cable inspector. He was soon promoted to chief inspector and early in January, 1923, assigned to electrolysis surveys. At that time he made electrolysis surveys and designed highly effective protection systems against electrolysis in both cable and gas piping systems in Manhattan, the Bronx, Queens and Westchester.

In 1927 he resigned from the New York company to enter the employ of the United Gas Improvement Co. as electrolysis engineer. From that date until his resignation on Dec. 31, 1941, Smith was electrolysis engineer for the entire UGI system. He started his own consulting engineering practice on Jan. 1, 1942.

■ ■

AGAEM Plans Post-War 1944 Advertising Program

A program to include a nation-wide newspaper campaign, trade paper, direct mail, and point of sale material has been announced by the Association of Gas Appliance and Equipment manufacturers, with the aim of assisting dealers and gas utilities in obtaining advance orders for post-war deliveries.

The program, to be carried out in 1944, is built around the Certified Performance gas range which meets standards set up by home service directors and engineers of the manufacturers and the AGA. The 1944 program was announced by Lloyd C. Ginn, chairman of AGAEM's CP sales management committee.

In the 1943 program, 889 newspapers in 38 states carried the program material to a circulation of about 20,000,000.

Manufacturers of CP ranges are: A-B Stoves, Inc.; American Stove Co.; Clare Bros. & Co., Ltd.; The Cleveland Cooperative Stove Co., Cribben & Sexton Co., Detroit-Michigan Stove Co., The Estate Stove Co., Glenwood Range Co., James Graham Mfg. Co., Hardwick Stove Co.; Moffats, Ltd.; O'Keefe & Merritt Co., Geo. D. Roper Corp., Standard Gas Equipment Corp., The Tappan Stove Co.

■ ■

Industrial Men Meet at National Metals Congress

UNDER the guidance of Carl H. Lekberg, Northern Indiana Public Service Co., experts in industrial gas utilization met in Chicago last month during the National Metals Congress to gather data and information on many of today's war production heat treating problems and projected technical subjects and sales plans into the days when war production will give way to peace-time manufacturing.

Ben H. Gardner, Columbia Engineering Corp., Columbus, Ohio, and chairman of the Industrial and Commercial Gas Section, welcomed the industrial gas men and their guests from the National Metal Congress.

Gardner introduced Dr. A. E. White, past president of American Society for Metals, and director of the department of enginering research, University of Michigan, who spoke on quality metals in the war.

Technical subjects discussed covered the whole range from the tremendous open hearth furnaces discussed by the chairman of the AGA Metals Treating and Melting Group, John P. Brosius, Equitable Gas Co., Pittsburgh, Pa., to a tiny radiant tube the size of a lead pencil, described by Nelson R. Gorsuch, Citizens Gas & Coke Utility, Indianapolis, Ind. Mr. Brosius described the work of his metals treating committee and its three sub-committees, No. 1 on Heat Treatment of Aluminum and Magnesium and Their Alloys, led by C. George Segeler, AGA; No. 2, led by F. W. Marklin, Philadelphia Electric Co., which worked on high speed, direct heating; and No. 3, on use of gas heat treating equipment in educational institutions, led by Robert C. LeMay, Connecticut Light & Power Co.

Segeler later made a complete report of the work done in the aluminum and magnesium fields with gas. This report will be printed in full later this year and made available to the industry. In addition to technical advancements described by Segeler, he made the unqualified statement that a majority of the aluminum heat treating done on this continent is now done with gas and that the percentage is increasing steadily.

Two panel discussions were held. One was composed of gas utility men, their subject being "Post-War Problems Industrial Gas Will Face," and the other was composed of leading manufacturers of gas heat treating equipment whose subject was "As Manufacturers See Industrial Gas Equipment of the Future."

■ ■

Oil Picture to Be Shown At December IOCC Meeting

It is expected that the sound and color motion picture, "Oil for Tomorrow," will be ready for showing at the winter meeting of the Interstate Oil Compact Commission to be held Dec. 10 and 11 at the Broadview Hotel, Wichita, Kan.

Charles L. Orr, secretary, announced that proposed subjects for the Wichita meeting will be outlined by the executive committee.

Flora Dowler Wins McCall Home Service Award

WINNERS of the 1943 McCall's Magazine awards for outstanding contribution to the advancement of better living in the home, through the promotion of gas appliances and equipment, sponsored by McCall's Magazine and administered through the American Gas Association, were announced Oct. 28 at the annual meeting of the association in St. Louis.

Flora Dowler

Flora C. Dowler, home service director of the Manufacturers Light & Heat Co., Pittsburgh, Pa., was awarded first prize of $100 in war bonds and stamps, plus an engraved plaque. Second prize of $50 in war bonds and stamps and a framed illuminated parchment went to Joie Kammer, home service director of the New Orleans Public Service, Inc., New Orleans, La. Third prize of $25 in war bonds and stamps and a framed illuminated parchment was won by Florence Matheny, home service director of Southern Counties Gas Co., El Monte, Calif.

Directors of home service departments of gas utility companies here and in Canada were invited to compete. Awards were made on papers of 2000 words or less submitted by entrants covering the aims of the home service department, the training of personnel and sales people, community activities engaged in and increase in scope of home service activities, particularly in relation to the war.

Judges for the McCall Magazine awards were R. E. Williams, new business manager of the Binghamton Gas Works, Binghamton, N. Y.; R. B. Denhardt, district manager, Central Hudson Gas & Electric Corp., Newburgh, N. Y.; R. A. Malony, sales manager, Bridgeport Gas Light Co., Bridgeport, Conn.; W. D. Williams, assistant general appliance representative, Public Service Electric & Gas Co., Newark, N. J.; and R. A. Gordon, sales manager, Washington Gas Light Co., Washington, D. C.

■ ■

PCGA Advertising Completes 15th Year

In reviewing its cooperative advertising campaign of 15 years, the Pacific Coast Gas Association reports that PCGA supervising committees have directed the production of more than 700 separate advertisements for Pacific Coast trade and business journals, over 150 advertisements (mostly full pages, many in color) for regional domestic magazines, and approximately 2000 technical articles and news items relating to gas utilization, actually printed, as well as many other materials and programs.

■ ■

Industrial Gas Meeting

The Midwest Industrial Gas Sales Council, made up of a group of industrial gas engineers affiliated with the AGA, met in Milwaukee Nov. 11 and 12. The meeting included a day of technical discussions and a day of inspection trips through Milwaukee plants. The council normally meets four times a year.

Service to Industry

If you are building or converting combustion facilities for power, heating or processing—Webster, standard, designed and manufactured gas burners, oil burners, combination burners and control units are available.

Webster Combustion Engineers are ready to assist in solving your combustion problems and to design special equipment to meet special conditions.

Consult Webster First —

THE WEBSTER ENGINEERING COMPANY . . . . TULSA, OKLA.

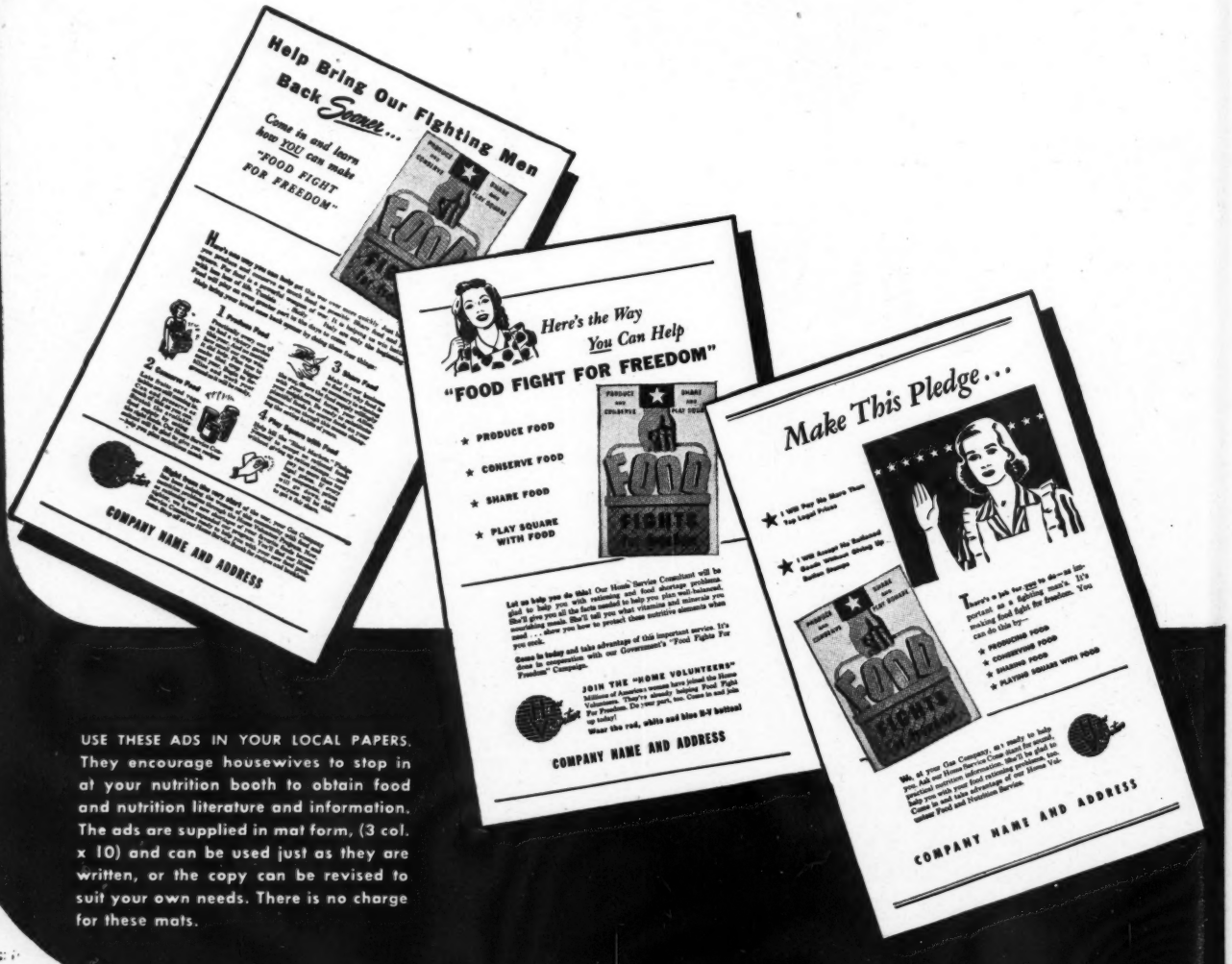
Division of SURFACE COMBUSTION - - - - - - - - - - - - - - - - Toledo, Ohio

Representatives— CATLETT ENGINEERS, INC., Dallas ● F. J. EVANS ENGINEERING CO., Birmingham, Houston
F. P. FISCHER ENGINEERING CO., New Orleans ● E. G. LANGHAMMER CO., San Antonio
SURFACE COMBUSTION, Chicago, Denver, Pittsburgh ● OIL FIELD EQUIPMENT CO., New York

TO HELP

support our Government's "Food Fights For Freedom" Campaign

. . . here are new Home Volunteer materials


Help Bring Our Fighting Men Back Sooner...
Come in and learn how YOU can make "FOOD FIGHT FOR FREEDOM"
COMPANY NAME AND ADDRESS
Here's the Way You Can Help
"FOOD FIGHT FOR FREEDOM"
★ PRODUCE FOOD
★ CONSERVE FOOD
★ SHARE FOOD
★ PLAY SQUARE WITH FOOD
JOIN THE "HOME VOLUNTEERS"
COMPANY NAME AND ADDRESS
Make This Pledge...
COMPANY NAME AND ADDRESS

USE THESE ADS IN YOUR LOCAL PAPERS. They encourage housewives to stop in at your nutrition booth to obtain food and nutrition literature and information. The ads are supplied in mat form, (3 col. x 10) and can be used just as they are written, or the copy can be revised to suit your own needs. There is no charge for these mats.

...you...

The importance of food in this war grows with every Allied victory. And with every victory more and more food is needed. That's why our Government is launching the "Food Fights For Freedom" Campaign—bringing to the people of America the need for conserving and producing as much food as possible.

Gas Companies throughout the country can continue to play a vital part in this campaign. For they are already well established in the minds of homemakers as the food and nutrition information headquarters in their communities.

To help you mobilize the people of your community to action, Servel has prepared a special group of "Food Fights For Freedom" Campaign Materials:

Local Newspaper Ads
New Envelope Stuffers
Radio Transcriptions
One-Minute Radio Scripts
Drop-in Ad Ideas
Billboard Suggestions
Other Home Volunteer Materials

Send for a folder giving the complete details about these materials (some of them are illustrated below). Write today to Servel, Inc., Advertising and Sales Promotion Department, Evansville 20, Indiana.

SERVEL, Inc.

PEACETIME MAKER OF THE SERVEL GAS REFRIGERATOR

THIS LIGHTWEIGHT ENVELOPE STUFFER will ride "free" in your next regular statement mailing. It effectively outlines the way housewives can cooperate in the "Food Fights For Freedom" Campaign.

FOR LOCAL RADIO SPOTS SERVEL has prepared twelve special one-minute radio transcriptions. They feature Billie Burke along with her cook, Jefferson James, and announcer Bud Collyer. You can use these recordings as "spots", or as part of your own locally sponsored radio program.

Old Cast Iron Pipe Does War Duty

Ten-year-old cast iron pipe in the trench.

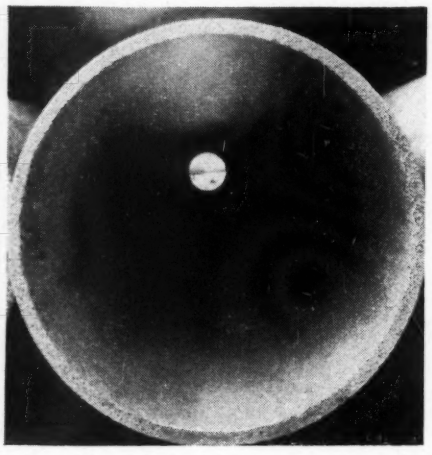
TEN-YEAR-OLD cast iron pipe from Boston is now doing war duty in Richmond, Va.'s high pressure gas distribution system.

The pipe was needed to increase the gas supply to the South Richmond area, and WPB was willing to allow installation of the line if second-hand material could be obtained. The pipe, 12-in. diameter, plain ends, 18-ft. lengths and slightly less than the standard AGA thickness of 0.54 in., was located through the American Gas Association.

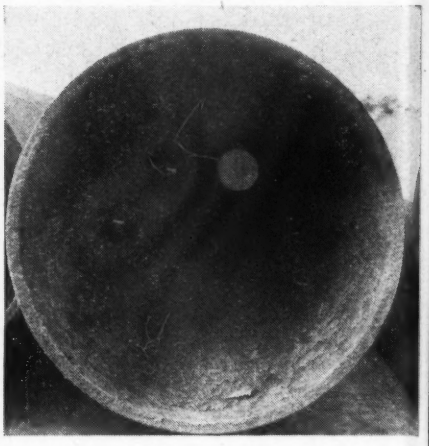
This pipe had been kept in open storage for a long time, and had to be cleaned before being installed. The pipe was uncoated, and in spite of no protection from the weather during its storage, deterioration was so slight as to be insignificant.

After the pipe was thoroughly cleaned the plain ends were painted in order to make a suitable surface for the application of the couplings. This simple treatment was so effective that when the pipe was installed and tested at 50 lb. air pressure per sq. in., the line was found to be almost perfectly tight.

The pipe was installed under the direction of Marsden Smith, chief engineer of the department of public utilities, Richmond, Va.



Before cleaning.



After cleaning.

Gas Consumption Reduced in Appalachian Area

THE office of War Utilities acted Nov. 1 to reduce natural gas consumption in the Appalachian area by ordering all industrial consumers who have facilities capable of burning residual fuel oil to operate those facilities to the limit to save gas during the coming winter.

The order, General Directive 1 of Order U-7, prohibits delivery of natural gas to consumers in the area from November 15, 1943, to March 31, 1944, to the extent that their stand-by facilities will meet their fuel demands. The order applies only to residual fuel oil facilities.

The Appalachian area, as defined in Order U-7, comprises the States of Ohio, Pennsylvania, New York, Virginia, West Virginia, Maryland, the District of Columbia and certain counties in Kentucky.

A tremendously increased war demand for natural gas in the area, which includes approximately 28% of the nation's war production, has caused an estimated deficit of from 12,000,000,000 to 18,000,000,000 cu. ft. of gas, it was explained by J. A. Krug, director, Office of War Utilities.

Use of residual fuel oil will save approximately 100,000,000 cu. ft. of gas a day, or 10,000,000,000 ft. in the course of the winter, Krug said.

> "This saving, coupled with the general voluntary conservation measures initiated jointly by the Government and the natural gas industry, may be enough to see the area through the winter without further restriction," Krug added.
>
> "If the winter turns out to be a severe one and additional steps are necessary, there are a number which can be taken without interfering with war production and without serious hardship on household consumers."

The 1943-44 winter demand for natural gas in the area is estimated at 485,000,000,000 cu. ft., an increase of 30,000,000,000 over last winter. Since the start of the war, industrial demand in the area has increased approximately one-third. With production, which centers in the Oriskany field in West Virginia, stabilized at a peak day's production of approximately 1,600,000,000 cu. ft., the increased demand must be met from other sources or by the use of other available fuels.

The principal outside source for natural gas in the area at present is by diversion from the Panhandle-Eastern pipeline which runs from the Amarillo (Texas) region to Detroit. This diversion has enabled companies operating in the Appalachian district to store some 6,000,000,000 cu. ft. of gas during the summer in underground reservoirs in Ohio. These are old gas fields which have been refilled.

By next winter, further relief will be obtained through the new Tennessee Gas and Transmission Co. pipeline now building from Corpus Christi, Texas. This will deliver 200,000,000 cu. ft. of gas daily into the Appalachian lines.

THE Magic Chef Gas Ranges your customers would have bought have been busy on many fighting fronts. Some of them are in the form of cowlings and other important parts for one of Uncle Sam's fastest pursuit ships. Others are in the form of 40 mm. anti-aircraft shells, emergency gasoline tanks, aerial bombs, parachute flares, and other military equipment. The cowling assembly, for example, now manufactured by the aircraft division of the American Stove Company, requires more than 800 different parts, exclusive of rivets . . . and most of these parts are also made in American Stove Company plants.

* * *

Although there will be no new Magic Chef Gas Ranges for homes until after the war, the skill and new techniques required to make military equipment plus years of range-making experience will produce better Magic Chef Gas Ranges when victory comes.

COPR. 1943 AMERICAN STOVE CO.

Magic Chef

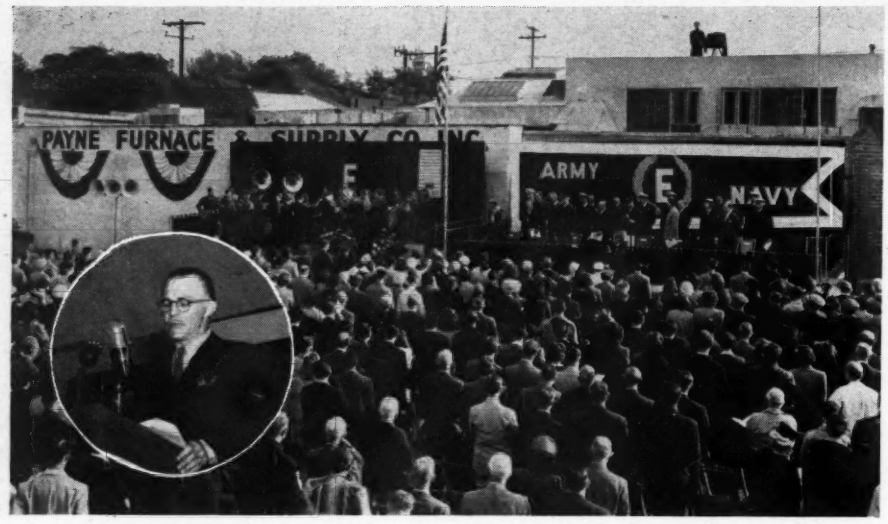
THE RED WHEEL GAS RANGE WITH
THE LIFETIME BURNER GUARANTEE

AMERICAN STOVE COMPANY

4301 Perkins Avenue, Cleveland, Ohio

CLEVELAND . . . LOS ANGELES . . . PHILADELPHIA
CHICAGO . . . ATLANTA . . . NEW YORK . . . ST. LOUIS

★ ★ *The Best Investment in the World is in your Country's Future — Buy War Bonds* ★ ★



View showing crowd at "E" Award Ceremony of Payne Furnace & Supply Co. Inset: E. L. Payne, vice president and general manager, accepts the award.

Payne Furnace Raises 'E' Award Flag

In a colorful ceremony attended by more than 1000 plant officials, workers and their families, Army and Navy officers and civic leaders, Payne Furnace & Supply Co., Beverly Hills, Calif., was awarded the Army-Navy "E" for outstanding performance in production of materials for War on Nov. 5.

E. L. Payne, vice president and general manager of the company, accepted the award presented by Major Walter F. Zwick, U. S. Army Air Force. Employee emblems, presented by Ensign Marcia Doyle, U.S.N.R., were accepted by Ruby Sorber, representing women employees, and Lee Laporte, representing the men. Prominent among the military guests were two gas industry leaders, Lieut.-Col. R. A. Hornby, on leave as vice president of Pacific Lighting Corp. and a former PCGA president, and Major A. E. Higgins, formerly vice president, Pittsburgh Equitable Meter Co. Major Howard H. Adams, U. S. Army Air Force, was master of ceremonies.

Payne has long been identified with the gas industry on the Pacific Coast, and is this year serving as president of the Pacific Coast Gas Association. His son, Gordon L. Payne, cadet officer candidate at Stanford University, was a member of the honorary color guard at the ceremony.

Payne Furnace has been 100% converted to war production for some time, making field photographic equipment for the Air Force and parts for plane manufacturers, besides holding other secret Army and Navy contracts. The company's first war job was to equip some 50 camps and cantonments throughout the country with heating equipment, after which the complete conversion to war production was effected.

Founded 28 years ago by D. W. Payne, father of E. L. Payne, the company had its beginnings in a small sheet metal shop in the Los Angeles industrial district. Turning to the production of gas-fired heating equipment, the company became the largest exclusive manufacturer of gas heating appliances in the United States.

The company pioneered in "zone" or "unit" heating, producing lightweight and streamlined forced-air units adapted to both summer and winter air conditioning. A line of floor furnaces was also produced by the company.

The engineering department maintains its own laboratory and plans are now being formulated towards the production of gas-fired heating equipment in the post-war period.

■ ■

SCMA November Meeting Devoted to One Subject

"Maintenance of Mercury Type Orifice Gages" will be the sole subject of the Nov. 18 meeting of the Southern California Meter Association at which Melroy Welch, district engineer, Barnsdall Oil Co., will speak.

Because of the nature of the topic selected, the entire evening will be devoted to the reading of the paper and a discussion of the three types of gages concerned: Emco, Foxboro, and Westcott. Each instrument will be on display and its operation demonstrated and explained.

Summer Air Conditioning Bulletin Published

SUMMARIZING two years' intensive study, Bulletin No. 18, "Gas Summer Air Conditioning" is now available through the American Gas Association Testing Laboratory. These studies were conducted under the supervision of the Joint Committee (of the Industrial and Commercial Gas Section and the Residential Section) on Gas Summer Air Conditioning and its Technical Advisory Committee.

The book opens with a short review of developments in summer air conditioning equipment for use with gas fuel. A description is given of contemporary models tested, these representing products of three manufacturers. Complete results of numerous cooling capacity tests on four separate air conditioners are given in detail. These demonstrate clearly the flexibility of the systems examined under most field conditions usually encountered in practice. Their durability, substantial construction and safety of operation are also clearly shown.

From the laboratories' tests and information collected through the Committee and from other sources, operating costs of the systems examined are shown to compare favorably with competitive equipment using other forms of energy.

A special feature is provided by inclusion of a section entitled "General Air Conditioning Technology."

■ ■

Memphis Natural Wholesale Rates Approved by FPC

With an annual reduction of approximately $352,900 in its wholesale rates for natural gas, the Memphis Natural Gas Co. has been permitted by the Federal Power Commission to put these rates into effect. The reductions are the result of conferences held between company representatives and commission staff members following the United Gas Pipe Line Co.'s reduction in the cost of gas sold to the Memphis company, as a part of its settlement in an investigation of its rates.

■ ■

New Okla. Fields Opened

Two shallow gas fields were opened in Oklahoma in the past 30 days.

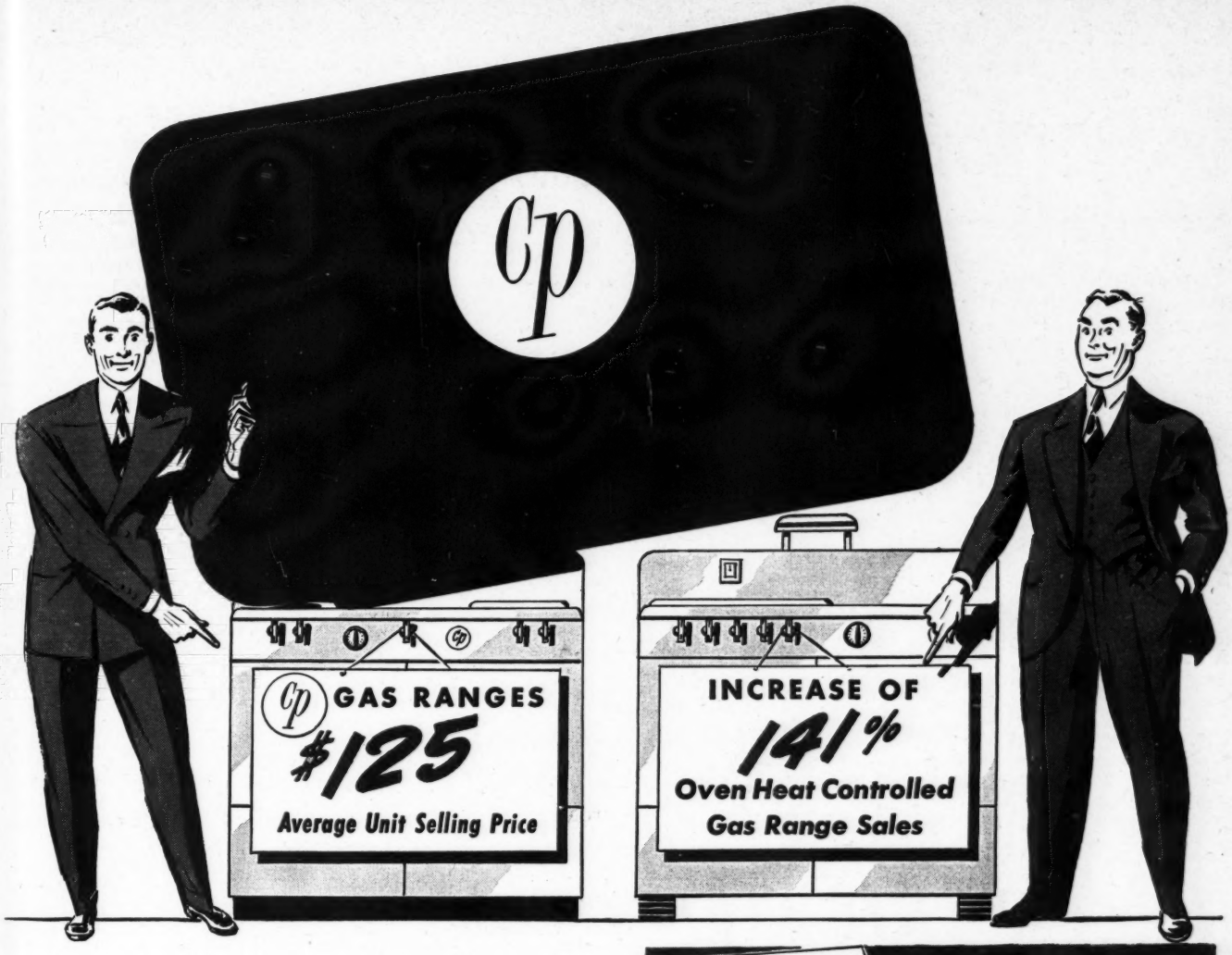
H. N. Conley brought in a well west of Elgin, in Comanche County, estimated at 5,000,000 cu. ft. of dry gas a day with high pressure. Drilling was halted at 1092 ft.

The E. K. McLennan et al No. 1 Nelson blew out at a depth of 951 ft. for an estimated 2,500,000 cu. ft. of dry gas a day in wildcat territory near Granite, in eastern Greer County. Location is on a bloc of about 4000 acres assembled this year by McLennan, R. C. Moss and C. E. Richardson, all of Oklahoma City.

■ ■

Appliance Directory Ready

The Directory of Approved Gas Appliances and Listed Accessories of the AGA, issued quarterly, is now available for the final quarter of the year and lists equipment currently produced. The directory is available at $2 per year, including monthly supplements, or at 35¢ per copy for the quarterly issues, from the American Gas Association Testing Laboratories, 1032 E. 62nd St., Cleveland 14, Ohio.



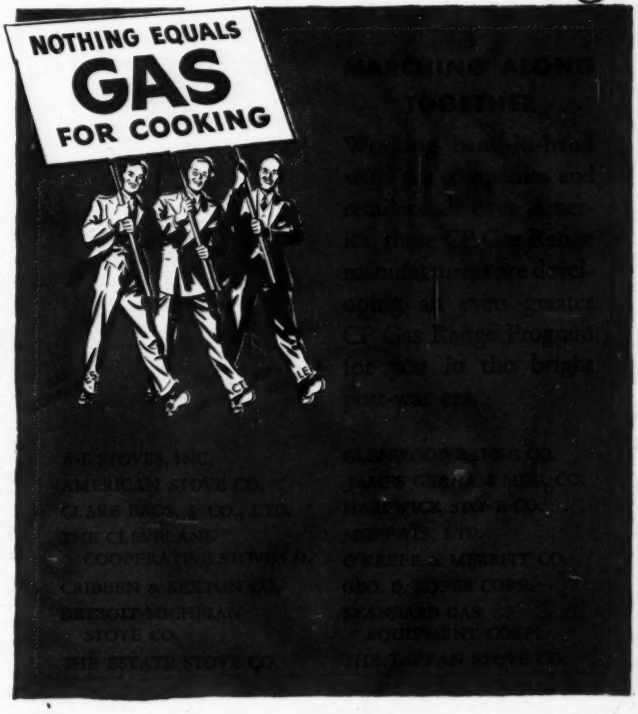
If you are looking for a success story, keep your eye on CP Gas Ranges. For CP Gas Ranges revolutionized cooking. As a result, your customers changed from "buying for price" to "buying for cooking perfection."

From the day they were announced, CP Gas Ranges became the American woman's buying guide. CP sales skyrocketed. Sales of oven heat controlled Gas Ranges climbed 141%. CP Gas Ranges prices averaged $125. The average unit selling price of all Ranges rose to $70.

After the war, new CP Gas Ranges *again* will help you build more profitable business — help keep Gas the preferred cooking fuel for 85 million Americans.

Start Today to Build for Tomorrow

Newspaper mats featuring "Buy a War Bond Today for the CP Gas Range You'll Want Tomorrow" will help you pave the way for post-war business. For proof sheets, write CP Range Division, Association of Gas Appliance and Equipment Manufacturers, 60 East 42nd St., New York 17, N. Y.



cp *The Gas Range of Tomorrow*

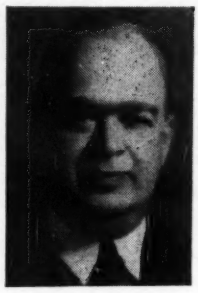
PEOPLE

E. Holley Poe of Tulsa, Okla., has been elected executive officer and general manager of the Petroleum Reserves Corp., Secretary of the Interior **Harold Ickes** announced on Oct. 14 in reporting progress of the organization, formed June 30. Poe has been director of the natural gas and natural gasoline division of the Petroleum Administration for War since June, 1942. The PRC has been engaged in integrating foreign oil facilities more closely into the domestic supply pattern, and making more efficient use of foreign oil for the fighting forces abroad.

E. Holley Poe

Ickes announced also that the corporation was about to send a mission to study oil fields and facilities in the Middle and Near East.

Succeeding **E. Holley Poe** as director of the division of Natural Gas and Natural Gasoline in the Petroleum Administration for War, **James E. Pew's** appointment was announced on Oct. 22 by Acting Petroleum Administrator **Ralph K. Davies.** Mr. Poe resigned to accept the post of executive vice president and general manager of the Petroleum Reserve Corp. The new director has had 20 years' experience in natural gas and natural gasoline industry. Shortly after having attended Cornell University and the Massachusetts Institute of Technology, Mr. Pew was employed by the United Natural Gas Co., Bradford, Pa., where he was engaged in the construction and operation of a charcoal absorption process natural gasoline plant. During 1924 to 1926, he was with the Hope Construction and Refining Co. of Pittsburgh, working in the laboratory of the Mellon Institute on research and development studies in connection with natural gasoline and liquified petroleum gases.



James E. Pew

For 16 years, from 1926 to 1942, Mr. Pew was associated with the Virginia Gasoline and Oil Co. of Charleston, W. Va., where he advanced to superintendent in charge of the operation of the company's natural gasoline plants and later was made manager of the Viking Distributing Co., a subsidiary organization engaged in marketing motor fuel. In 1942 Pew was called to PAW where he was a member of the production division. With the formation of the natural gas and natural gasoline division in June of 1942 Pew was made chief of the natural gasoline section and a year later became assistant director of the division.

•

Robert M. Newhall of Stoneham, Mass., has become the first student to complete training for an advanced degree at the Institute of Gas Technology at Illinois Institute of Technology, Chicago, and was granted a master of science degree after two years of graduate work. Newhall is one of 24 chemistry or chemical engineering graduates who have been granted fellowships for study at the Gas Institute during the past two years, and was graduated in chemical engineering from Tufts College in 1941. He has spent two summers in industry with the Rochester Gas & Electric Corp., Rochester, N. Y., and the Surface Combustion Co., Toledo, Ohio.

Under the educational plan of the Gas Institute, about 15 students are selected each year for fellowships. Supported by industry, the Gas Institute was established in 1941 for educational and research service, and trains students for key positions in the gas industry.

•

H. A. Faull

H. A. Faull, who last month resigned as meter and regulator engineer for the Southern Counties Gas Co., Los Angeles, has joined the engineering staff of the American Liquid Gas Corp., Los Angeles, being assigned to installations and other field work throughout the United States. His first assignment, according to a company announcement, is at Provo, Utah, where gas-air plant mixing machines will be installed to preheat the coke ovens of the Columbia steel plant.

Faull had served Southern Counties for 11 years, becoming affiliated with the company after his graduation from Notre Dame in 1932. He is a past president of the Southern California Meter Association and has three times served as chairman of Measurement and Regulation Committee of the Pacific Coast Gas Association.

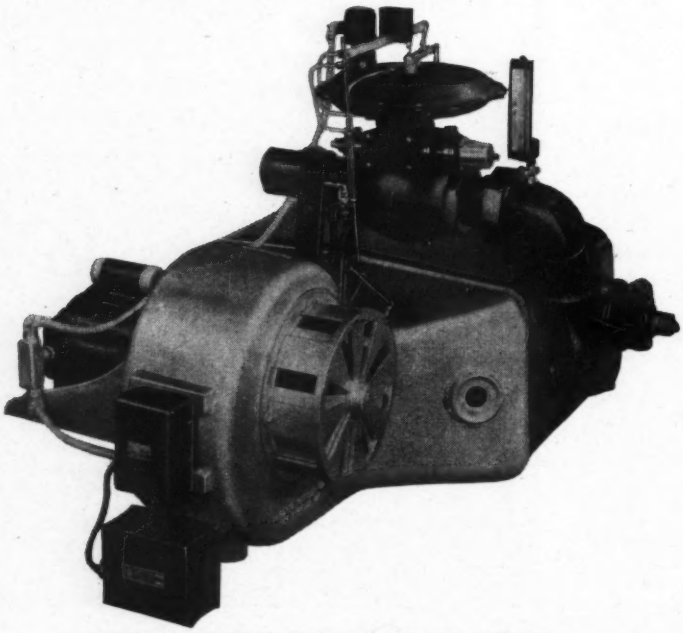
•

John Zink Co., Tulsa, Okla., has announced the appointment of **Orville T. Hagaman** as foundry foreman of the en-

The Mettler "FAN-AIR" Gas Burner

LATEST MODEL FEATURES

New Automatic Safety Pilot and Triple Controls



HERE IS A "FRONT VIEW" OF FAN-AIR BURNERS

Notably—A MECH'L DRAFT AUTOMATIC gas burning SYSTEM embodying electric and throttling control with "TRANSAXIL" FLAME GUARD PILOT all properly combined for safe, efficient combustion. It's the "post war" burner. Available now and prompt shipment of all sizes.

LEE B. METTLER CO.

LOS ANGELES **406 South Main Street** **CALIFORNIA**

Conserve

GAS and ELECTRICITY

UNCLE SAM asks you to be vigilant against waste, and practice war time economy in your use of Gas and Electricity. That means lamps and appliances must last longer. That brings about the saving of essentials metals such as brass, copper, chrome, tungsten, etc. That means money saved with which to buy more War Bonds. Some useful suggestions for preventing the waste of gas and electricity are given below.....

A once-a-week dusting of lamp shades and bulbs can increase light output as much as 30 per cent.

Set hot foods aside to cool off to room temperature before you store them in your refrigerator.

For a quick hand rinse use cold water. Why draw gallons of hot water through cold pipes for half pint use?

Wherever possible make a good reading lamp serve two or more members of your family.

Keep your refrigerator at medium or economical operating speed. Defrost once a week and add years of life to your refrigerator.

Use your range oven for roasting and baking ...not for heating.

Use the right lamp for every lighting need. You get 50% more light from a 150 watt globe than you do from THREE fifty watters.

Repair dribbling hot water faucets. 90 drops a minute waste 350 gallons of hot water in a month.

When a pot boils turn the heat low. Foods cook just as quick and your kitchen gets less steamy.

GAS AND ELECTRICITY ARE VITAL IN WAR PRODUCTION. . .DO NOT WASTE THEM!

larged machine shop and foundry that the company operates. Mr. Hagaman has moved to Tulsa from the state of Minnesota. He has a background of 40 years' experience in the foundry business.

•

Watson E. Derwent, vice-president of the Geo. D. Roper Corp., Rockford, Ill., who has been with Roper for 28 years and an active figure in the gas industry for over 40 years, announced his retirement effective Nov. 1, 1943.

It was as a young man in 1915 that "Wat" Derwent became associated with the Roper organization. Starting as assistant to the vice-president, he performed a wide range of duties.

Watson E. Derwent

In 1917 Derwent became sales manager of the gas range division and in 1918 was elevated to the position of vice-president.

Previous to joining the Roper organization he served for 11 years as sales manager of the Kalamazoo Stove Co., Kalamazoo, Mich.

Derwent was prominent in association activities for years. He was a member of every state gas association and a member of the American Gas Association for 26 years, serving on many industry committees. He helped organize the Association of Gas Appliance and Equipment Manufacturers and served as president for two years. He has just completed a term as chairman of the board of directors of the American Gas Association. Derwent has served on the AGA Standards committee from the time the laboratory was set up.

Since the start of the war much of his time has been devoted to coordinating activities of the gas industry with the war-time requirements of various governmental agencies.

•

Appointment of **Guy Thorp White** as Hollis subdivision manager for Lone Star Gas Co. has been announced by **L. B. Denning, Jr.,** operating manager for the general division of distribution. He succeeds **G. C. Hollis,** resigned.

White joined the gas company in 1936. In 1941 he was transferred to Abilene and in 1942 to Stamford.

•

Carl M. Hill, former assistant field supervisor of the Lone Star Production Department, has been appointed to the position of assistant chief production engineer, **L. T. Potter,** superintendent of that department, recently announced. Hill will act as assistant to **E. A. Brown.**

Potter also announced the appointment of **Minor O. Attebery, Jr.,** to the position of field supervisor, replacing **J. W. Burrage,** who resigned, and the appointment of **Austen J. Hargrave** as district production engineer for the East Central Texas District, formerly under Mr. Attebery's supervision. **Neiman C. Smith,** production engineer in the West Central Texas District, succeeds Hargrave as district production engineer at Coleman.

•

Fred H. Townsend Oct. 16 was appointed superintendent of gasoline plants for Lone Star Producing Co. to replace **Harry Wheeldon,** who resigned, it was announced by **Julian L. Foster,** Lone Star general superintendent and chief engineer. Wheeldon, who succeeded **J. R. Jarvis** upon the latter's death last March, has accepted a position with Shamrock Oil and Gas Co.

Townsend came into the Dallas office from East Texas, where he was district superintendent of gasoline plants, to assume the position as assistant superintendent for the system under Wheeldon.

•

Dr. E. H. Boomer, professor of chemical engineering at the University of Alberta, has been named chairman of the Petroleum and Natural Gas Conservation Board of Alberta. Dr. Boomer, who is an expert on Turner Valley gas, will continue his work with the university, visiting the Calgary headquarters of the conservation board when required.

•

Robert C. McConnaughey has been appointed to the SEC to succeed Edmund Burke, Jr., resigned. McConnaughey has served in various legal positions in the Agriculture Adjustment Administration (AAA) and the Senate Railroad Investigating Committee.

•

Gas companies participating in the gas industry's national advertising program and located in Washington, Oregon, Nevada, Idaho and Montana have chosen **R. G. Barnett** of Portland to represent them on the American Gas Association's Committee on National Advertising.

Barnett is vice-president and general manager of the Portland Gas & Coke Co. and replaces James F. Pollard of Seattle, who has resigned his position as president of the Seattle Gas Co. effective Nov. 1, and who intends to take up residence in California.

•

The Federal Power Commission announced Oct. 25 its appointment of **Harry S. Littman** as assistant general counsel in charge of matters under the Natural Gas Act, effective immediately. Littman is the second assistant general counsel to be appointed by the commission in recent months, **Howard E. Wahrenbrock** having been made assistant general counsel primarily in charge of matters under the Federal Power Act in July of this year.

Littman, who has been on the commission's staff since 1938, has participated as a principal attorney for the commission in a number of its important legal proceedings, including the Panhandle Eastern Pipe Line Co., El Paso Natural Gas Co., and Cities Service Natural Gas Co. natural gas rate cases. These three cases resulted in the commission's issuance of orders directing the companies involved to reduce their wholesale rates for natural gas by a total of more than $10,000,000 a year. He also handled the cases involving the applications by the Tennessee Gas & Transmission Co. and the Hope Natural Gas Co. for certificates of public convenience and necessity to construct natural gas pipelines from the

HEAT CONTROL
in a package for
Homes of the Future

These ingenious, gas-actuated, automatic control package sets are unbelievably low in cost, but they add a tremendous purchaser appeal to any residence. Handling manufactured, mixed, natural or butane gas, they are suitable for central furnaces, floor furnaces, boilers, radiators, gas ranges, water heaters, etc. B-60 Package Sets include an improved B-60 valve, with tamperproof cover and integral pilot valve assembly, an ivory and chrome finished Trimtherm thermostat, 30 feet of wire, and a thermocouple pilot generator which provides all current needed for valve operation. Regular thermostats, thermometer thermostats and timer-thermostats available with or without night cut-off. B-60 control systems are safe, quiet, dependable and proved. Check on their many advantages now. Ask for Catalog No. 52.

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Mid-Continent gas fields into the Appalachian area.

A native of Newark, N. J., Littman moved to Akron, Ohio, in 1913. He was engaged in the private practice of law in Akron for four years, and in 1932 was appointed assistant director of law for the city of Akron. Two years later he became special counsel for that city.

•

William J. Judge, president of National Fuel Gas Co. since 1918, retired from active service Oct. 1. He is credited with conceiving the idea of underground storage of natural gas and putting it into practice. In the summer of 1915 he accomplished it successfully in the Welland county, Ontario, Canada, gas fields and a year later extended the practice, in much greater volume to the Erie county, New York, gas fields about 20 miles south of the city of Buffalo. Since that time the practice has been extended to other natural gas producing areas.

Judge will be succeeded in office by **Leigh A. Brown,** who has been vice president of National Fuel and who has also been president, since 1934, of Iroquois Gas Co. and the other subsidiaries located at Buffalo. Succeeding Brown as vice president will be **William H. Locke,** who is also president of Pennsylvania Gas Co. at Warren, Pa. He has been an official of subsidiaries of National Fuel Gas Co. for the past 18 years.

•

J. F. Curry, former head of Panhandle Eastern Pipe Line Co.'s (Kansas City, Mo.) industrial sales promotion department, retired recently after 13 years with the company. Affiliated with the gas industry since 1900, Curry went to work at the turn of the century for the River Gas Co. in Marietta, Ohio. Four years later he moved to Columbus, Ohio, as office manager for the Ohio Fuel Supply Co., and was later put in charge of all city construction and distribution. In 1914 he became superintendent of distribution and transmission for all cities and towns served by the company and in 1918 was appointed assistant general manager.

Following the purchae of the Columbia Gas and Fuel Co. and the Springfield Gas Co. by the Ohio Fuel Supply Co., Curry became general manager and director of these companies. In 1930 he joined the Panhandle organization, and remained with it up until the time of his retirement under the pension plan instituted by the company in 1940.

Obituaries

Thomas A. Mighill

Widely recognized as the dean of American gas chemists, Dr. Thomas A. Mighill, research chemist, died recently at his home in Newtonville, Mass., at the age of 76. Mighill devoted his entire life to chemical research in the manufactured gas industry. After graduating from Goettingen College, Germany, in 1895, where he received his M.A. and Ph.D. degrees, he returned to the United States to become a research chemist for Stone & Webster. In 1922 he resigned to accept a position as research chemist for the Blackstone Valley Gas & Electric Co. of Pawtucket, R. I., where he remained on the staff until the time of his death. He often served also as a consultant to other companies in the industry when they were confronted with problems in the manufacture and distribution of gas.

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Robert D. Field

Robert D. Field, a vice president of Panhandle Eastern Pipe Line Co., died suddenly on Sept. 2.

■ ■

R. E. O'Neill

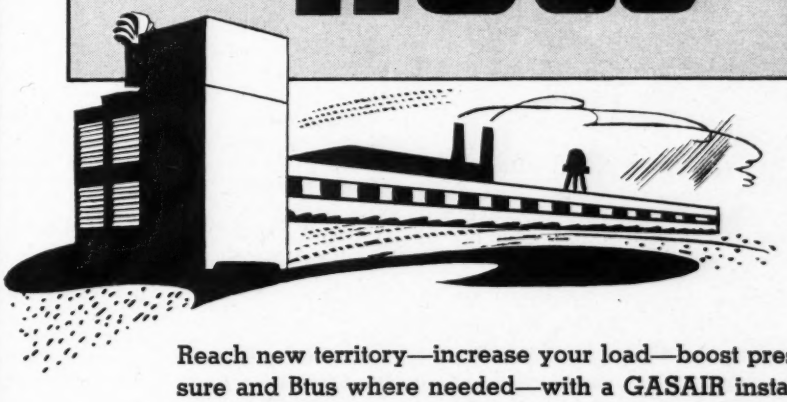
Robert E. O'Neill, executive office assistant, customers service division, The Peoples Gas Light & Coke Co., Chicago, died at his home Sept. 1. Mr. O'Neill had more than 29 years of service with the company.

Valve Shortage Relieved

Manufacturing facilities not needed for top priority cast steel valves, used in synthetic rubber plants and high octane refineries, are being released for the production of semi-steel valves, relieving a critical shortage and giving evidence that manufacturers are getting "over the hump." The Merco Nordstrom Valve Co. reports near completion of orders for the top priority valves, and expects to have these valves available for other uses within 90 days. War orders required a 600% increase over normal plant capacity for a short period, according to Col. W. F. Rockwell, president of the company.

SERVE MORE CONSUMERS

now



Reach new territory—increase your load—boost pressure and Btus where needed—with a GASAIR installation distributing butane-propane and air mixtures.

Blends perfectly with your present natural or manufactured gas!

FOR PERMANENT OPERATION, ALSO . . .

GASAIRS produce gas at lower cost than manufactured gas! Big saving in installation costs and maintenance.

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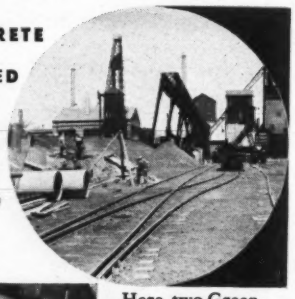
If Your Industrial Users Need a Stand-by Plant, Recommend GASAIR

CONCRETE DUCT INSTALLED WITH *Hydraulic* PIPE PUSHERS

★ Developing pressure ranging from 25,000 to 150,000 lbs., Greenlee No. 795 Pipe Pushers perform the Herculean task of pushing concrete duct underground. Without tearing up road beds and without extensive trenching, they handle construction jobs with amazing speed and efficiency.

36" CONCRETE DUCT PUSHED 70 FEET UNDER RAILROAD TRACKS

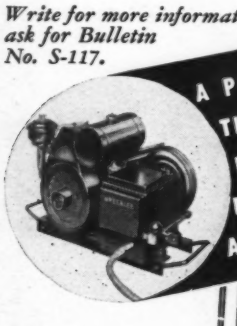


Here, two Greenlee No. 795 units were used to push 36" concrete duct a distance of 70 feet under 3 railroad tracks. Pipe up to 6" is usually pushed with closed end. As shown, large duct is pushed with open end and Soil is removed through the duct.

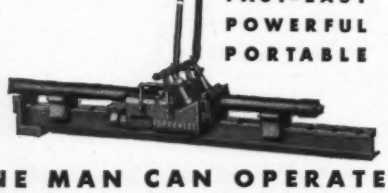
For Tomorrow's Job — Get Facts Today!

Get the facts *now* on Greenlee Pushers. Find out how they save time and manpower — savings that pay for the pusher often on the first or second job. Two models are available to essential users on priorities of A-1-J or higher. Model 790 — 20 Ton unit handles 1¼" to 4" pipe; Model 795 — 20 Ton unit pushes larger pipe or duct beyond 4".

Write for more information— ask for Bulletin No. S-117.



A POWER PUMP THAT PROVIDES EXTRA SPEED ON PUSHING JOBS! ASK FOR DETAILS



FAST-EASY POWERFUL PORTABLE

ONE MAN CAN OPERATE

Greenlee TOOL CO.

1951 COLUMBIA AVE. • ROCKFORD, ILL.

ON ACTIVE DUTY

Herman Karl Merker, formerly of Brooklyn Union Gas Co., has been promoted to lieutenant colonel. Colonel Merker entered service Aug. 14, 1941, as a captain, a commission earned as a reserve officer, and on March 1, 1942, was made a major. He is a commander of an air base on an island in the Antilles group. Only other employee of the company to have earned this rank is **William H. Weber.**

Among the 200 American Liberator bombers which flew from Egyptian bases early in August to blast a daily production of 18,000 tons of refined oil products away from the Nazis was "Lil' Joe" piloted by **Lieut. Jack W. Viers,** formerly clerk in Shreveport district accounting department of the United Gas Pipe Line Co. For heroism during this raid Jack was awarded the Distinguished Flying Cross. Jack has also received the Air Medal with five Oak Leaf clusters denoting his participation in at least 50 missions.

Maj. Albert E. "Cap" Higgins, vice president and general manager of the Pittsburgh Equitable Meter Co., is stationed with the 21st Ferrying Group of the Ferrying Division, Air Transport Command, Army Air Forces, in Palm Springs, Calif.

The major is a West Pointer, loves to fly airplanes, was in the last war and pulled down a Croix de Guerre with Palms for his efforts.

Maj. Higgins' army career began in 1911 when he entered the U. S. Military Academy. He was graduated in 1915 as a second lieutenant of cavalry. He served in the Mexican interior campaign for eight months in 1916 and then went to Fort Sill, Okla., a field artilleryman. He went overseas to France in that service as a captain and remained there until 1919.

It was his work as head of a field artillery battery that won his distinguished bravery citation. He was supposed to keep up with an infantry outfit. He kept advancing and shelling the Huns, only to find later that he was two miles ahead of the infantry and doing very well. He retired from active service in 1928 and entered the reserve as a captain.

His gas industry affiliations began in 1928 when he took charge of the National Gas Section of the American Gas Association in Dallas, where he remained until 1936.

In 1936 his success carried him to the Pittsburgh Equitable post, which he held until entering the army and which he is scheduled to assume again when hostilities cease.

Also serving at the Palm Springs army air field with the 21st Ferrying Group and, incidentally, directly under Major Higgins, is another former natural gas man. He is Sgt. **George Goodale,** former publicity director for the Oklahoma Natural Gas Co. during 1931 and 1932 with offices in Tulsa.

Sgt. Goodale later became a prominent publicity man in Hollywood and directed the exploitation of some of filmland's brightest luminaries.

Safety Council Reorganizes Industrial Division

The industrial safety engineering division of the National Safety Council has recently been reorganized, and will expedite the provision of safety information in the various mediums through which the council carries on its campaigns. The new plans make full use of the industrial membership sections as centers for the accumulation and distribution of all safety information, such as the Safe Practices Pamphlets, Industrial Data Sheets, Engineering Summaries, Safety Instruction Cards, and other materials furnished by the council.

Safety engineers on the council's staff have been appointed as contact men in those sections of industry with which they have familiarity. For the public utilities and metals industries, the engineer is E. M. Jasper, and for the petroleum and paper and pulp industries, Clark D. Bridges.

■ ■

Shell Casing Made Pipeline

Several miles of pipeline made out of old World War 1 shell casing has been in service for the past 24 years, as portion of the transmission line of the eastern division of the Southern California Gas Co., between Riverside and Colton, Calif. In 1919, a quantity of the shell casing was purchased at a low price, and although the wall is much thinner than ordinary pipe, and the casing an odd size—7⅝ in. diameter—it was put into service and has been used ever since, being found in good condition recently when uncovered during a program of reconditioning now being carried out over the system.

■ ■

Robertshaw Aids Food And Fuel Conservation

John A. Robertshaw, president of Robertshaw Thermostat Co., has announced that his company has inaugurated a unique educational program having the two-pronged objective of aiding the war effort currently while building future goodwill for Robertshaw and for the range manufacturers it serves.

The Robertshaw company is addressing homemakers direct through the medium of women's interest programs on leading radio stations in metropolitan markets from coast to coast. "The eminent conductors of outstanding women's programs," Mr. Robertshaw explained, "are telling homemakers of the importance, in these war-time days particularly, of using correct oven temperatures to avoid waste of food and fuel."

The company believes its educational program will benefit homemakers everywhere, whether they now have heat controls or not, for the information on how to use their ovens properly will be helpful to the war effort by cooperating with government nutrition and food conservation campaigns.

Natural Gasoline Men Hold Fall Session

THE California Natural Gasoline Association held its 18th fall session at the Biltmore Hotel in Los Angeles on Friday, Nov. 5, with forenoon and afternoon sessions and a dinner in the evening. The feature paper of the occasion was read by James E. Pew, director, Natural Gas and Gasoline Division of PAW. His paper was titled "Cycling Operations and Potential Use of Products," and proved of considerable interest because of the trend toward cycling operations now commanding major attention in California. Pew drew upon the recycling experiences in the Mid-Continent fields.

Among the other speakers were Dr. A. H. Boultbee, chief technologist at Wilmington refinery for Shell Oil Co., who gave a talk on "Uses of Natural Gas Fractions in Today's Refinery Operations"; F. D. Parker and E. G. Ragatz, process engineers for Bechtel-McCone-Parsons Corp., who presented companion papers to Dr. Boultbee's presentation in discussing heavy-oil refining processes. The authors showed how these processes contribute to the war effort and particularly how they contribute to the processes utilizing natural gas fractions.

L. H. Scheel, production foreman, Union Oil Co. of California, read the final paper of the day under the title of "Maintenance Program for Compressor Plant Operators." The speaker told of the association's sponsorship of a compressor operator exchange program which facilitates the exchange of operating ideas.

■ ■

FPC Report Shows Typical Residential Electric Bills

Electric rates for residential customers in the United States as of Jan. 1, 1943, are shown in a report issued Oct. 31 by the Federal Power Commission which presents, in the form of typical net monthly bills, residential rates in all communities of 2500 or more population. The report covers typical bills for 15, 25, 40, 100, 250 and 500 kwh. of residential service in the communities covered which are listed alphabetically by states within the nine standard geographic divisions of the country.

Residential bills are shown in the main tables of the report announced today for 3754 communities served by 1257 utilities. Of these communities, 822 or 21.9% are served by 795 publicly owned utilities.

The report shows a wide difference between the lowest and highest residential bills for identical quantities of electric energy among communities in the same population groups.

■ ■

Wisconsin Utility Asks to Install Water Gas Set

Explaining that substantial economies in operating cost will result from the substitution of water gas generating equipment for existing coal gas equipment at their plant, officials of the Appleton gas division of the Wisconsin-Michigan Power Co. appeared before the public service commission at Madison, Wis., Sept. 13. M. G. Gorrow, supervisor of the plant, stated that a comparative study showed that a new water gas set could be installed and made to produce more cheaply than by rehabilitating and repairing the old equipment. The application calls for installation of water gas generating equipment at an estimated cost of $86,902, whereas repairing the present property would cost $74,000. Savings of 10c per M cu. ft. could be effected, Gorrow concluded.

■ ■

Manufacturers Light & Heat Buys Beaver-Butler Gas

Sale of Beaver-Butler Gas Co. to Manufacturers Light & Heat Co. of Pittsburgh for $25,000 was approved last week by the Public Utilities Commission. The Manufacturers company will rehabilitate the property.

Industrial Salvage Manual

The first comprehensive treatment of the subject to be issued, the book, "Salvage Manual for Industry," is available from the Technical Service Section, Industrial Salvage Branch, Salvage Division, War Production Board, Washington. Containing 245 pages of information and data, the manual was prepared by a group of nearly 50 experts and edited by leading industrial publication editors. All phases of industrial salvage operations are covered in a "how-to-do-it" manner, and although the information has been prepared for war-time conditions, it will have continued application for peace-time as a guide to sound salvage practices.

MAKING FRIENDS FOR GAS

DOMESTIC
Water Heater Thermostat

Plenty of hot water, at the desired temperature, is taken for granted today in most American homes. The fuel that provides this hot water has to be dependable at all times if it is to continue in service. To do this job properly, day after day, gas must be regulated by dependable controls. In thousands of homes throughout the nation this service is being maintained by the use of DOMESTIC's Water Heater Thermostat. This tested control is AGA approved. One sure way of "making friends for gas" is to demand DOMESTIC.

Domestic

A name for dependability in safety and comfort of gas appliances

DOMESTIC THERMOSTAT COMPANY
LOS ANGELES, CALIFORNIA

P. C. G. A.
Co-operative
ADVERTISING
Now completing

15th
YEAR

In 1929, western gas companies launched the regional cooperative campaign that has continued ever since. Supervising committees have directed the production of:

- MORE THAN 700 SEPARATE ADVERTISEMENTS FOR PACIFIC COAST TRADE AND BUSINESS JOURNALS.
- OVER 150 ADVERTISEMENTS (MOSTLY FULL PAGES, MANY IN COLOR) FOR REGIONAL DOMESTIC MAGAZINES.
- APPROXIMATELY 2,000 TECHNICAL ARTICLES AND NEWS ITEMS RELATING TO GAS UTILIZATION, ACTUALLY PRINTED.
- OTHER MATERIALS AND PROGRAMS TOO NUMEROUS TO LIST HERE.

Few, if any, trade associations in the United States can cite a cooperative advertising record so thorough, so consistent. It is a testimonial, we feel, to the stability of the Association, and its members' friendly spirit of mutual helpfulness. ★ Unquestionably, too, it has been a major factor in building load when load was needed, as well as the *good will* that's *always* needed.

THE PACIFIC COAST
GAS ASSOCIATION

GAS FUEL

SERVING THE WEST
IN WAR AND PEACE

Pipeline Construction News

● Of a total of 328 miles of natural gas lines scheduled for conversion to oil service under the Government-Industry program, work has been completed on 253 miles.

● **The West Texas Utilities Co.** is laying a 21-mile, 6-in. welded steel pipe line from the White and Baker field in Pecos County to the plant near Girvin. It will purchase gas from the Cardinal Oil Co. of San Angelo, Texas. Interconnected lines will transmit power to South Texas, Okla., and Arkansas from the Girvin plant.

● A 70-mile gas gathering system is to be laid by **Warren Petroleum Corp.** for a natural-gasoline plant near Hawkins, Texas. Pipe will range from 2-in. to 24-in. Contract has been let to Anderson Brothers. Work will be supervised from a field office at Hawkins. Laying will be done by one or two spreads to start early this month.

● FPC Oct. 18 authorized **United Gas Pipe Line Co.**, Shreveport, La., (1) to construct and operate additional facilities in Terrebonne Parish, La., to meet the greatly increased demands for natural gas in the Mobile and New Orleans gulf coast areas, and (2) to remove certain unused pipeline facilities needed in other parts of the company's system from the Waskom area in Harrison County, Texas, and Caddo Parish, La.

The proposed construction consists of approximately 2½ miles of 4½-in. pipeline, to be located in Terrebonne Parish, La., and extending from the South Houma gas field to connect with the applicant's 12¾-in. line from the De Large field. The latter line was authorized by the Commission Aug. 24, 1943, and is now under construction.

● Laid with pipe reclaimed from an old line, the **Lone Star Gas Co.** of Dallas is constructing a new line from Ellis to Anderson Counties, to strengthen the system for peak winter loads. The line will bring additional gas from the Cayuga field, and strengthen distribution areas throughout the 4500-mile network of the company.

Scheduled for completion by the first of this month, the new line is composed of 24½ miles of 16-in. pipe, and 10½ miles of 12-in. pipe and partly parallels the 117-mile 20-in. line from Irving.

● High-pressure water testing of the western leg of the 20-in. ("Little Big Inch") pipeline—from Beaumont, Texas, to Norris City, Ill.—is now under way, Petroleum Administrator for War Harold L. Ickes announced Nov. 2.

He said that initial delivery of petroleum products through this 667-mile leg of the Texas-East Coast line will begin in about a month when tests are concluded. The line will operate at capacity rate as soon as certain critical materials, particularly valves, are obtained for 10 of the 13 pumping stations. Three of the stations have been completed.

● Officials of the **Cities Service Gas Co.** are studying proposed construction of 75 miles of 16-in. gas line from the Welda storage field in Kansas to supply customers at Kansas City, Mo. Willingness to give more detailed consideration to the Kansas City supply situation was expressed by Cities Service executives appearing recently before the Federal Power Commission. Vice President O'Brien told FPC that at such time as steel is available, application will be made for a certificate.

● An FPC hearing was scheduled for Oct. 25, concerning applications filed by **El Paso Natural Gas Co.**, El Paso, Texas, (1) to construct and operate additional facilities in New Mexico and Arizona, (2) to acquire and operate the facilities of the applicant's wholly owned subsidiary, Fort Huachuca Gas Co., and (3) to acquire and operate a portion of the facilities of applicant's wholly owned subsidiary, El Paso Gas Transportation Corp. The order consolidated these matters for the purpose of hearing.

El Paso Natural proposes to build about 35.3 miles of loop line extending from the company's No. 4 compressor station in Luna County, New Mexico, and about 23.3 miles of loop line extending from its Morenci compressor station in Greenlee County, Arizona.

The order provides that interested State commissions may participate in the hearing as provided in the Commission's Provisional Rules of Practice and Regulation under the Natural Gas Act.

● An application by the **Grand Trunk Pipe Line, Inc.**, of Independence, Kan., to tap the Hugoton natural gas field with a 300-mile southern Kansas pipe line right after the close of the war is on file with the Kansas Corporation Commission. Paul R. Johnson, president of the firm, is also president of the Union Gas System, Inc.

The line would extend from the Hugoton field 300 miles east to near Chanute, Kansas, with a compressor station in Grant County. It is proposed to serve all other intersecting gas carriers and municipal distribution systems that want fuel.

● Linden, N. J., delivery branch of the "Big Inch" crude oil pipeline is back in operation after being shut down 52 days for testing and repairs of defective pipe and is now capable of delivering more than 150,000 barrels a day to refineries in the New York area. Simultaneous deliveries to Philadelphia through the other branch line are utilizing the rest of the complete present capacity of the "Big Inch," now approximately 215,000 barrels a day, and the full capacity of 300,000 barrels a day will be handled without difficulty when the last "Big Inch" pumping stations are completed sometime during this month.

● Whether Saskatoon, Sask., would obtain steel pipe for the 160-mile natural gas line project to the Lloydminster fields hinges on whether the City Council can prove that the construction is essential in wartime.

Letters from United States pipe manufacturers read in the council indicate

the pipe might be obtained, provided manufacturers were given allotment numbers by the Department of Munitions and Supply at Ottawa, under the "modified controlled materials plan" in use in this country.

A letter from M. A. Hoey, associate steel controller in Canada, read at the council, said the city would have to prove that construction of the pipe was essential at this time.

Hoey added that the Saskatoon project, for which Northern Natural Gas Co. holds the franchise, would require a minimum of 21,120 tons of steel piping, assuming use of 12-in. pipe.

■ ■

Synthetic Rubber Plant Opened by Gulf

J. Frank Drake, president of the Gulf Oil Corp., announced recently that the company had put into operation a Thermofor catalytic cracking plant at its Port Arthur, Texas, refinery. The new units, the second of this type to be completed since its development several years ago, produce butylenes, the basic ingredients of butadiene used in the manufacture of synthetic rubber, and also a blending component of aviation grade gasoline.

The butylenes will be turned over to the nearby Noches Butane Products Co. plant, organized jointly by Gulf, Socony-Vacuum, Texas, Atlantic, and Pure Oil Companies, where it will be further processed into butadiene. This will be sold to the Goodrich and Firestone Rubber Companies for the manufacture of synthetic rubber.

In order to get the Thermofor process into production as soon as possible and to conserve steel and manpower, the plant was completed by adding catalytic cracking and regenerating equipment to thermal cracking facilities heretofore used for producing motor grades of gasoline.

■ ■

Civil Engineers Form Collective Bargaining Group

Last month in Atlanta the American Society of Civil Engineers recommended that its local branches set up collective bargaining committees to negotiate salaries for members. This would appear to be the first move by a powerful professional group to set up its own union, and can be taken as an action by professional men against unionism as represented by CIO and AFL.

The local bargaining committees would be independent of the national organization, although coordination will be established through traveling advisors.

The day would seem to be coming when the professional men in self defense will have to organize in order to make certain that their views and demands are presented by approved representatives selected by the group concerned.

There are now two unions open to professional men, Federation of Architects, Engineers, Chemists & Technicians, affiliated with CIO, and the International Federation of Technical Engineers, Architects and Draftsmen, AFL.

FPC Denies Cabot Gas Abandonment Applications

The Federal Power Commission Oct. 6 denied an application filed on April 2, 1943, by Cabot Gas Corp. for permission to abandon the service of natural gas from its 14-in. pipeline to its customers in the state of New York and to abandon the transportation of natural gas for ultimate redelivery to Godfrey L. Cabot, Inc., its parent company.

Also denied was an application by Godfrey L. Cabot, Inc., for permission to cease supplying natural gas to Cabot Corp., to Producers Gas Co. at points in Angelica and Belmont, Allegany county, New York, and to certain customers of Empire Gas & Fuel Co., also in Allegany county.

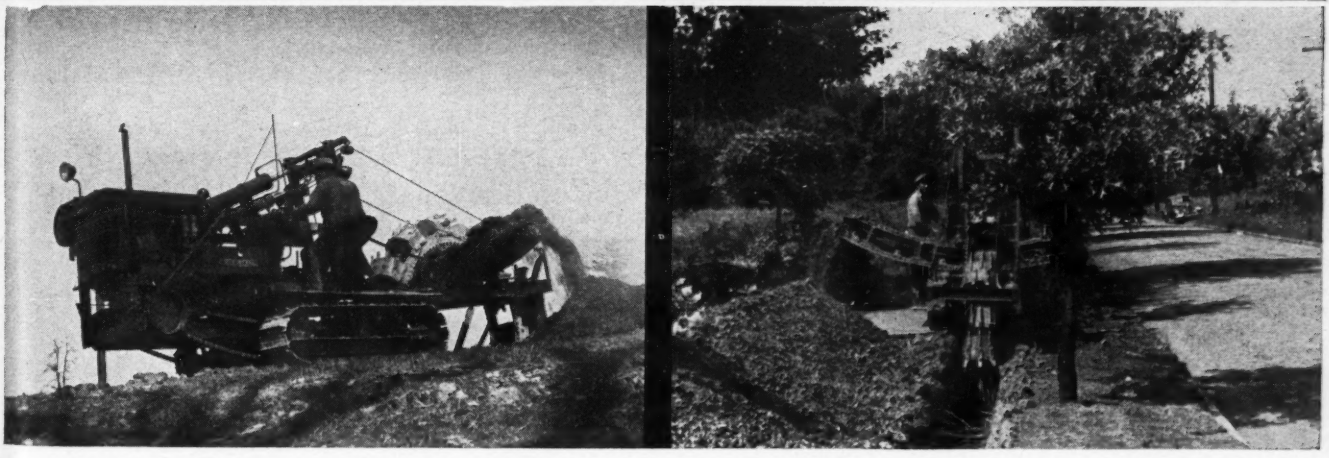
On April 12, 1942, the Cabot companies filed similar applications which the commission denied by order dated Jan. 5, 1943, for the reasons stated in its opinion No. 86.

■ ■

Portland Gas & Coke Publish "Blue Flame"

"The Blue Flame"—Volume 1, Number 1—is the new house organ of the Portland (Ore.) Gas & Coke Co. Don Johnston, of the company advertising department, is editor. The publication is the first issued since 1938, when "Gasco News" was suspended. Dedicated to all members of the Gas Company family, "Blue Flame" is a slick paper, illustrated, 4-page sheet published monthly and covering all events of interest to the company and the employees.

"CLEVELANDS"— MOBILE—HARD HITTING—COMMANDO TYPE PERFORMANCE IS LICKING TRENCHING JOBS EVERYWHERE . . .



● Trenching in the close confined city areas for distribution lines — digging main line jobs across country — stripping pipe for reconditioning or take-up evidence "CLEVELANDS" versatile, rugged, mobile, fast, compact, powerful performance — features that have made "CLEVELANDS" preferred equipment by so many Gas Utilities and why "CLEVELANDS" can be found today on so many wartime projects, military and civilian, global as well as national.

THE CLEVELAND TRENCHER COMPANY
20100 ST. CLAIR AVE. "Pioneer of the Small Trencher" CLEVELAND, OHIO
"CLEVELANDS" Save More . . . Because they Do More

Facts on Easton, Pa. Explosion

B. D. BARR, director of advertising, Metropolitan Edison Co., Easton, Pa., sends in the following report concerning the explosion which wrecked a part of the Easton plant early in the morning of Sunday, Oct. 24.

A disastrous explosion of undetermined origin occurred at the gas plant of the Metropolitan Edison Co., at Easton, Pa., early Sunday morning, Oct. 24. The modern water gas plant, situated adjacent to Bushkill Creek and in the heart of the city, surrounded by dwellings and a lumber yard, was seriously damaged by the blast at 5:10 A.M.

Two employees, the water gas maker and the plant fireman, were killed outright, as was also the driver of a truck delivering gas oil to the plant. A third employee, who was guard at the plant, received serious burns and contusions, and after laying several hours covered by debris was finally dug out in a perfectly conscious condition. He is resting comfortably at an Easton Hospital and will recover. Eighteen or 20 residents of the immediate neighborhood were treated at the hospitals for abrasions, etc., caused by the tossing around they received from the force of the explosion and the falling debris in their homes.

The FBI, WPB, Pennsylvania Utilities Commission, and Bureau of Mines had representatives on the scene early, trying to determine the cause of the blast. It is believed, however, that this will never be definitely determined, as the man most likely to know the details died at the time of the explosion.

The explosion apparently occurred at or near the plant office and meter repair shop which are adjacent to the exhauster room. The buildings of brick completely disappeared and much of the machinery was damaged. A brick tank single lift relief holder, 75 ft. in diameter by 30 ft. high, was completely demolished and a 500 Mcf steel tank storage holder was badly damaged.

Help was immediately volunteered and accepted from the nearby gas companies of Philadelphia, Allentown, Bethlehem and Reading and repairs are progressing rapidly so that it is hoped the discontinuance of service will soon be remedied.

The Easton Co. serves a population of about 75,000, according to the 1940 census. There are both high and low pressure systems, serving a total of about 18,000 customers, of which number 12,000 are in Easton and its immediate suburbs, 4,500 in Phillipsburg, N. J., 800 in Nazareth and 900 in Washington. The latter two towns are approximately 10 and 12 miles, respectively, from the gas plant, in opposite directions and supplied entirely by high pressure gas, as is also the plant of the Ingersoll-Rand Co., in Phillipsburg.

This is the first serious accident that has ever occurred at Easton during 75 years of the company's existence and the only time that the fires have gone out in that period. Not even the serious floods of several years ago were able to quench those fires long enough to discontinue service.

Repair work is progressing rapidly, thanks to the marvelous cooperation of surrounding gas companies, manufacturing concerns and the Ingersoll-Rand Co., all of whom responded speedily and unstintingly with every form of assistance possible.

It is hoped that service will be resumed within the week, but when it becomes necessary to shut off and then turn on the appliances of 18,000 customers, repair and purge every piece of equipment of a modern gas plant of the size of that at Easton, as well as check the entire main system, it is a tremendous task and must be done quickly. Without the kind cooperation and patience of the entire community as well as the many friends in the industry, to have progressed as far as has been done at this date (Oct. 28) would have been an utter impossibility.

■ ■

CED Moves to New York

National headquarters of the Committee for Economic Development were moved Nov. 1 from the Department of Commerce Building, Washington, D. C., to 285 Madison Ave., New York 17, New York, according to an announcement from John Fennelly, executive director. The move was made to aid in relieving crowded conditions in Washington.

While CED is neither an official nor a semi-official agency of the government, it will continue to maintain close relationship with the Department of Commerce and other government agencies concerned with problems of economic development, being financed entirely by individual business firms.

Its purpose is to provide post-war jobs and a higher standard of living through private enterprise. In working toward this end, CED will continue to maintain close relationships with the Department of Commerce and other government agencies concerned with the program.

The research committee of CED has just issued a booklet, "Post-War Employment and the Settlement of Terminated Contracts," which can be obtained ($3 for 100) at the New York address.

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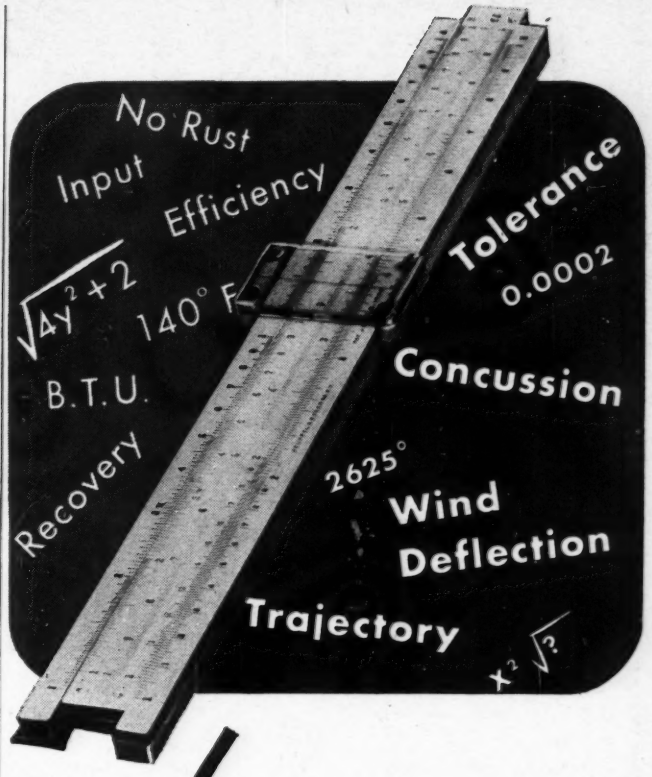

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LOS ANGELES CALIFORNIA

View showing crew at work during relocation of Southern Counties Gas Co. 16-in. line. Relocation was made necessary by shifting ground conditions.

Southern Counties Relocates Pipeline

DUE to a sliding earth condition in the Ventura avenue field, the Southern Counties Gas Co., Los Angeles, has found it necessary to relocate 500 ft. of 16-in. low pressure suction pipeline serving as intake to the company's Ventura compressor plant. Gas is received from Associated Oil Co.

In making the installation, Southern Counties replaced the line with new pipe from stock, using wrinkle bends instead of mitre welds in laying the line. This was done to increase the safety factor, since portions of the pipe still lie in terrain of questionable stability. The pipe which was removed was in excellent condition, both inside and out, and will be cleaned and placed in company stock.

Since the line is an important part of the company's system bringing gas to southern California war industries and populace, the project was undertaken to forestall any possible interruption during the coming winter peak period.

Two Natural Gas Reserves Discovered in Oklahoma

Two new natural gas reserves for central Oklahoma were discovered during October in the Edmond and Britton areas of Oklahoma county.

The Edmond flow resulted from an attempt of a crew to salvage casing from an old, presumably exhausted oil well of the Ohio Oil Co. at 4700 ft. When the salvage crew had pulled 600 ft. of casing, the well suddenly headed and blew out making approximately 20,000,000 cu. ft. of gas, oil, and gas-cut mud. After the well had been blowing into the air for three days, Halliburton oil well cementing crews made a connection on the pipe and killed the flow. Operators will run a gamma ray log to determine source of the gas, after which the well will be recompleted.

The Sinclair-Prairie Oil & Transwestern Oil brought in a high pressure gas field in the old Britton area which tested an estimated flow of 30,000,000 cu. ft. of gas a day through casing perforations in the Oswego lime zone at from 6094 to 6129 ft.

Eason Oil Co. in August opened a new gas pool in Logan county with a well southeast of Seward with an initial flow of 4,500,000 cu. ft. daily at 5990 to 6005 ft.

Earmarks of a new gas field in Payne county, Oklahoma, were found Oct. 25 in a flow of 2,000,000 cu. ft. per day from the No. 1 Shaw well of Thomas N. Berry et al. at 4056 ft.

■ ■

Kansas Commission Rules On Hugoton Field Prorations

Revisions in the basic proration order covering the Hugoton gas field in Kansas are under consideration by the Corporation Commission. Operators last month told the commission that proposed changes would make the order more workable. No radical revisions of the rules were recommended, but merely changes which would clarify the order.

The commission also took under advisement the allowable for the field for the Oct. 1 to March 1 period after it was testified that purchasers had placed their needs at 43,655,000,000 cu. ft. The figure was an increase of 12,771,000,000 cu. ft. over the same period last year.

Bureau of Mines Issues Coking Tests Report

The United States Bureau of Mines has issued a report describing coking tests conducted on six western Washington coals, some of which now are supplying a new by-product plant at Tacoma, Wash. Research workers in analyzing the coals have concluded that they will yield cokes suitable for domestic, smelter, general industrial and metallurgical and electrochemical and electrometallurgical purposes.

Water gas manufacture, it was stated, can be carried out with some of the stronger of these cokes, from the standpoint of size of coke, analysis, and ash-softening temperature. The tests indicate that some of the cokes could be used for foundry and iron blast-furnace purposes if the consumer were to modify conventional operating practices or be willing to accept cokes whose formerly adopted specifications have been modified or altered.

A copy of the publication, Report of Investigations 3717, "By-product Coke Oven Tests of Washington Coals," may be obtained without charge from the Bureau of Mines, Department of the Interior, Washington, D. C.

■ ■

Construction Limited Further In Re-drafted L-41

In the completely re-drafted limitation order No. 41, which limits construction, and which was issued Nov. 1, the War Production Board made the following changes of interest to the gas industry in general:

A limit of $200, instead of $1000, is placed upon any type of construction for which a higher specific limit is not authorized. Installation of plumbing equipment rated on WPB-2631 (formerly PD-851) is permitted if the cost is under $200.

Revised L-41 revokes L-41a, L-41b, L-41c and Interpretation No. 1 inasmuch as their provisions are either incorporated into, or altered by, the new order.

■ ■

P G & E Workers Receive Hour Wage Increase

Two thousand employees of the Pacific Gas & Electric Co. (East Bay Division) have won a 2c an hour wage increase, bringing the average rate for the workers to $1.10 an hour, the Tenth Regional War Labor Board has announced. The bargaining agent was the Utility Workers' Organizing Committee (CIO). The average rate was 95.3c an hour in Jan., 1941, and since that time increases totaling 12.5c have been granted. The increase represents addition of approximately $100,000 a year to company operating expense.

■ ■

Tucson Vetoes Purchase

Tucson voters have rejected a proposal for the city to purchase properties of Tucson Gas, Electric, Light & Power Co.

The municipal ownership election on the Arizona utility was held on Oct. 29.

Cleveland Cooperative Stove Announces Name Change

James Mitchell, president of Cleveland Cooperative Stove Co., has announced that the company's manufacture of Grand gas ranges and other home appliances now in the planning stage for post-war development, will be carried on under the name of Grand Home Appliance Co.

Grand Home Appliance Co. will operate the present range factory in Cleveland, with David L. Edelmuth continuing in charge of sales and promotion activities.

The Cleveland Cooperative Stove Co., which has engaged in war production since before Pearl Harbor, was founded in 1866 by a group of iron molders just returned from the Civil War. Though originally a cooperative enterprise, the company was incorporated in 1867.

The Cleveland Cooperative Stove Co.'s foundry division will now carry on its activities under the name of Cleveland Foundry Co.

■ ■

Old Gas Purifiers Become Storehouse

The waterproof, fireproof, rat-proof, termite-proof and earthquake-proof qualities of steel purifier chambers has provided the Southern Counties Gas Co. (Santa Barbara, Calif.) gas plant some good storage facilities which might otherwise have been thrown away when the old purifiers, abandoned since 1928, were about to be demolished, but instead were turned into storerooms for records.

Although principally engaged in war production, Utility is in a position to supply gas-fired heating equipment, fans, blowers and coolers. Mass production of the complete line will be resumed after the war.

Peace-Time Manufacturer of the Famous Utility Air Koolers, Blowers, Fans, Floor Furnaces, Circulating Heaters, Unit Heaters, and Forced Air Furnaces.

UTILITY FAN CORPORATION

4851 South Alameda, Los Angeles 11, California

Committee to Revise Conservation Rules

A COMMITTEE composed of representatives of 56 oil and gas companies met at Oklahoma City, Okla., Nov. 1, to begin a revision of the rules, regulations and requirements governing conservation of natural gas, crude oil, or petroleum in Oklahoma.

Personnel of the committee was announced by Walker T. Pound, conservation officer of the Oklahoma Corporation Commission, who filed an application with the Commission on July 19, 1943, for a general revision of the rules and regulations, most of which have been in effect since 1917.

Following enactment of the 1933 oil and gas conservation law other regulations were adopted to supplement some of the old 1917 rules. Wartime conditions, imposing increased needs for conservation, and bringing in of new fields, some of which produce both oil and gas from the same sand, and a greater demand for natural gas, have made necessary modification of many of the old rules and adoption of additional ones.

At its first meeting, Nov. 1, the committee named W. A. "Gus" Delaney, Jr., of Ada, as its chairman; E. G. DeParade, Phillips Petroleum Co., vice chairman; and Lawrence Alley, chief clerk of the conservation department of the Commission, secretary. A committee on committees also was named to appoint sub-committees. The sub-committees will include: Committee on drilling, Production committee, Gas committee, Committee of Plugging and Abandoning; Committee of Secondary Recovery and Legal committee.

Many subjects for proposed revisions and new rules were suggested at the first meeting. Suggestions for work of the Gas committee included a proposed rule to prescribe a uniform method for taking potentials; definition of commercial gas wells; time for taking and reporting pressures and volumes, and filing of pipe line maps.

Mr. Pound explained that present rules contain no definition of a gas well. Present rules, he said, limit production of a gas well to 25% of its potential capacity, but in case of discovery of a small gas well, it might be desirable to permit a greater percentage of potential capacity production where no oil is produced from the well.

Oklahoma has no maximum gas-oil ratio rule as in some states, and there is no rule for salt water disposal, Mr. Pound said.

The question of whether oil and gas companies should be required to file an application for a permit to drill or merely notify the Commission of intention to drill, also came up for discussion. A desire was expressed by some of the committee members for filing with the conservation department of more complete logs, perforating and squeeze cementing records, which would more clearly define formations in the well.

Since existing rules and regulations were adopted the Oklahoma Corporation Commission has assumed tighter control of production of natural gas in some fields, including the Guymon sector of the Hugoton field, the Chickasha and Cement fields. The conservation department feels the need of more specific rules to guide it in determining and enforcing such regulation.

■ ■

SEC Approves Standard Oil Divestation Plan

The plan proposed by Standard Oil Co. (New Jersey) to divest itself of control of its gas utility subsidiaries by transferring them to Consolidated Natural Gas Co. in exchange for all the capital stock of the latter and then distributing the Consolidated stock to its own common stockholders was approved recently by the Securities and Exchange Commission.

Standard of New Jersey is to receive in exchange the 2,728,359 shares of capital stock of Consolidated with par value $15. Standard then will distribute the Consolidated stock to its own stockholders on the basis of one share of Consolidated for each 10 shares of Standard of New Jersey common outstanding.

■ ■

United Gas Purchases 84-Mile Pipeline

Acquisition of 84 miles of 8⅝-in. O. D. natural gas pipeline by the United Gas Pipe Line Co., Shreveport, La., from Willmut Gas & Oil Co. materially increases the company's growing facilities in the Jackson district and enlarges the delivery capacity of the Jackson-Mobile line. The Willmut line approximately parallels the Jackson-Mobile line, and when tied-in will serve as a loop. It is estimated that delivery capacity to the Mobile area will be increased by 1,250,000 cu. ft. per day on peak days.

■ ■

"Deduct-O-Graph" Provides Quick Payroll Tax Deductions

For ascertaining pay-as-you-go tax deductions speedily, the George S. May Co. of Chicago has created a new automatic device known as the "Deduct-O-Graph." This is a workable chart which shows the proper payroll tax deduction for any employee when proper settings are made as to marital status, wage range and pay period.

SELECTIVE SERVICE ★

Selective service drafted Klixon Controls, too. The Army and Navy want them for planes, tanks, ships, etc. Consequently, Klixon Gas Controls will no longer be available till VICTORY is won.

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MUELLER Gas Dial Stops give home owners, as well as industrial users control over their gas supply. The operator can readily see just how much of the supply is being used, and the flow may be increased or decreased to meet the individual requirement. The volume of gas is indicated by a pointer cast on the key which operates over a graduated dial. The use of these stops enables industrial gas burners, as well as house heating installations, to be operated with economy.

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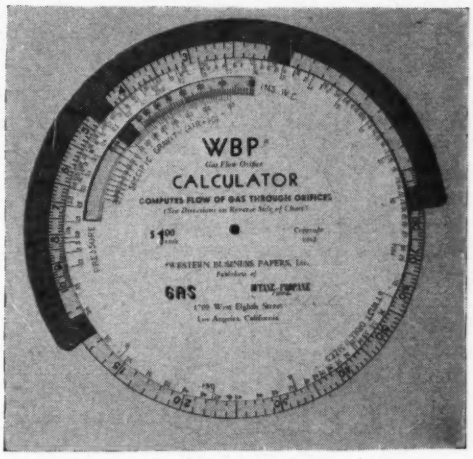

How Calculator Operates

To Find Drill Size

1. Rotate movable dial until specific gravity coincides with gas pressure.
2. Rotate movable segment until proper orifice coefficient coincides with desired gas quantity (cu. ft. per hr.). If orifice coefficient is not known, use 0.8.
3. Read drill size on movable dial opposite the arrow (0.8) on the orifice coefficient scale of movable segment.

To Find Cubic Feet Per Hour From B. t. u. Per Hour

1. Rotate movable segment until heating value of gas (B. t. u. per cu. ft.) coincides with gas quantity in thousands of B. t. u. per hour on quantity scale.
2. Read gas quantity in cu. ft. per hour against 1.0 (orifice coefficient scale).

To Find Quantity (Cu. ft. Per Hour) for Given Drill Size

1. Rotate movable dial until specific gravity coincides with gas pressure.
2. Rotate movable segment until arrow (0.8) on the orifice coefficient scale is opposite appropriate drill size.
3. Read quantity (cu. ft. per hr.) against appropriate orifice coefficient. If orifice coefficient is not known, use 0.8.

To Find B. t. u. Per Hour Given Cubic Feet Per Hour

1. Rotate movable segment until 1.0 on the orifice coefficient scale coincides with the gas quantity in cu. ft. per hour.
2. Read corresponding B. t. u. per hour in thousands against appropriate heating value (B. t. u. per cu. ft.).

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AN ASBESTOS PRODUCT

For venting gas-burning appliances

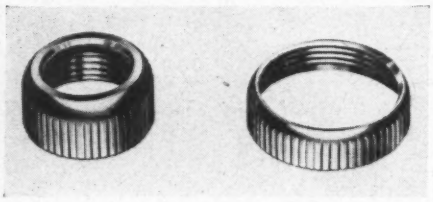
PRODUCTS

Conduit Nuts

Rumsen Co., 8059 Melrose Ave., Los Angeles, Calif.

Model: "AN" conduit, coupling and lock nuts.

Application: To provide a lighter conduit nut



that is as strong as a machined nut, and claimed to be stronger and more consistent in strength than nuts which have been die cast.

Description: These nuts are fabricated from sheet aluminum, and it is said that the new method develops a much lighter nut, a matter of importance to the aircraft industry in particular where weight and ease of handling are constant problems. The AN 3054 series of coupling nuts is now being produced by the company in the following sizes: -3, -4, -6, -8, -10, -12 and -16.

•

Paint Odor Remover

Holly Chemical Co., 125 E. 25th St., New York, N. Y.

Model: "Ridsmel."

Application: To eliminate usual odors from paint, thereby relieving loss of time frequently resulting from illnesses due to allergies, nose, throat and eye irritations.

Description: Said to be equally effective with brush or spray operation, a small quantity of Ridsmel, liquid paint deodorant, may be mixed with any paint, varnish or enamel. Claimed to be especially effective when painting must be done indoors, and not to affect color, drying or durability of finishes. One quart of the solution is used to neutralize 200 gallons of paint or varnish.

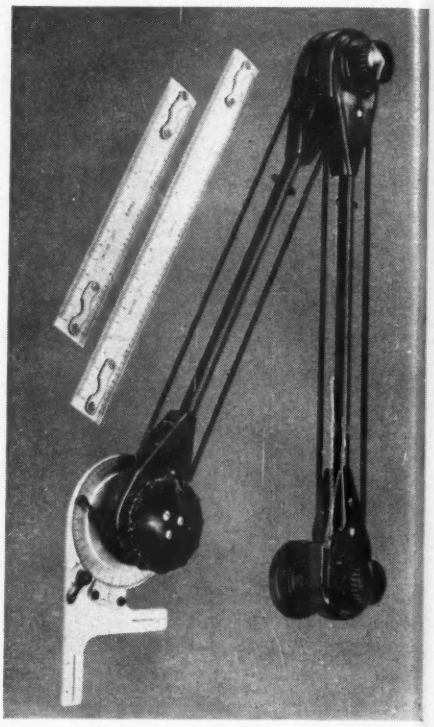
Portable Drafting Machine

V&E Mfg. Co., Pasadena, Calif.

Model: Vemco Junior Drafter.

Application: For mounting on a portable board for use in shop or field.

Description: Unit weighs but 3 lb. Accurate, parallel motion over entire board, full circle baseline setting, prelubricated and double-sealed ball bearings, and enclosed pulleys are features. Disk brakes at anchor and elbow allow drafter to be used on steeply inclined boards. Light-weight aluminum scales are available in 8-in. and 12-in. lengths and fit into resilient, slotted chucks in positive scale holder. Protractor is 3¾ in. in diameter and graduated in degrees with figures in quadrants.



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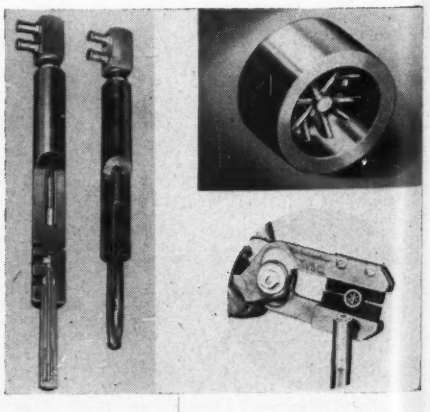
Refrigerated Welding Electrode

Frostrode Products, 19003 John R St., Detroit, Mich.

Model: "Frostpoint" Welding Electrode.

Application: To make possible full utilization of refrigerated welding and increase number of spot welds which can be made before tips require dressing.



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Blue Gas Plants — Gas Purifiers
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40 RECTOR STREET, NEW YORK, N. Y.

Description: Manufacturer claims that plants using this type electrode have reported increases of from 600% to 1000% over refrigeration of conventional electrodes in number of spot welds made before necessity for dressing tips. A great saving in copper is forecast by the maker in that the only part of this unit requiring replacement is the "Frostcap" —a quickly replaceable tip on the end of the welding electrode.

These electrodes are said to be so constructed as to provide absolute accuracy of coolant flow control through unit, thus insuring operation at maximum cooling efficiency at all times. The "Frostpoint" can be used on any welder, and comes supplied with an adaptor. Cut shows, upper right: the "Frostcap," claimed to eliminate 90% of copper requirements, as well as dressing of points; lower right: refrigeration makes it possible to use low temperature solder seal for caps, which may be replaced as shown with "electric" pliers; left: the complete new "Frostpoint" electrode with adaptor fitting into a standard electrode holder, compared with same holder (on right) with conventional electrode.

Catalogs

• Blaw-Knox Co., Pittsburgh, Pa., has presented a new 15-page bulletin (No. 1869) containing valuable suggestions for the elimination of dust from gas, lowering gas maintenance and transport costs, effective methods of reducing service complaints, and improving public relations. Copiously illustrated and designed to save the reading time of engineers and superintendents, this new booklet on gas cleaners also includes important installation information, vital essentials of gas cleaners, and graphically pictures the action of dust in pipelines and means to effectively combat it.

• Roots-Connersville Blower Corp., Connersville, Indiana, has prepared a bulletin, 31-B-15 covering Victor-Acme positive displacement gas pumps. This six-page folder in two colors contains many illustrations showing various types of driving arrangements which make these gas pumps readily adaptable to a wide range of industrial applications. On the back cover appears a group of units offered by manufacturers which have incorporated Victor-Acme gas pumps into the specialized equipment which they build.

• Allis-Chalmers Mfg. Co., Milwaukee, Wis., offers its "Guide to Wartime Care of Electric Motors," a 24-page booklet intended to bring such information up to date. Publication deals with various electric motor "enemies" such as dust, stray oil, moisture, friction, misalignment, vibration, uneven wear, overload and underload. In the back is a section devoted to quick diagnosis of motor ailments, describing symptoms that can be seen, heard and felt. Causes of these symptoms are described and cures suggested.

• Titeflex Metal Hose Co., 500 Frelinghuysen Ave., Newark, N. J., has just released a new catalog, No. 113, which deals with the general industrial applications of their line of flexible metallic tubing. This catalog describes the types of flexible tubing manufactured by the company used in the conveyance of oils, gases, and liquids. Complete data are given on available fittings, both industrial and S.A.E. Also included are complete pressure charts, charts showing radius of bend, and much other essential material. Many usual and unusual types of applications for flexible metal tubing are pictured and described, together with instructions for installation of the tubing.

• D. W. Haering & Co., Inc. 205 Wacker Drive, Chicago, Ill., announce the publication of a new 8-page bulletin describing the latest developments in proportioning and sampling equipment. Construction, operation and application of the new and improved Nelson Chemical Proportioning Pump are discussed. The fluid piston principle, basis of the model "B" feeder and all Haering proportioning and sampling machines is explained and discussed with reference to design, construction and operation of these machines. This bulletin is profusely illustrated with diagrams, installation photographs and tables.

• Industrial Oven Engineering Co., Cleveland, Ohio, has produced an 18-page bulletin, copiously illustrated with blueprints, on the subject of high production convection heated ovens. This brochure gives engineering information on batch and continuous heating processes for armament production, and provides tables on the density, weight and volume of gases and the specific heat and density of various materials. It also lists and describes the company's products in this field, with complete oven designs summarized and recent installations explained.

a HOT SEAT for HIROHITO?

WELL, not exactly—although we hope it will contribute indirectly to "that end"! ★ All we can say now is that the device illustrated is highly valued by the U. S. Army, and is one of many war products PAYNE is making for Uncle Sam. ★ In fact, our facilities are devoted entirely to supplying the armed forces; and we know you would have it that way. ★ But after the war, count on PAYNE Furnaces, as in the past, for *years-ahead design and years-on-end performance.*

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NEARLY 30 YEARS OF LEADERSHIP

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TRADE **K-CO** MARK
Gas Stops - Automatic
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850 **BASO** SWITCH
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GREAT FLEXIBILITY
Milwaukee Gas Specialty Company
MILWAUKEE WISCONSIN

Standard of Calif. in Search For New Dry Gas Fields

Search for new reserves of dry natural gas for industries and homes of the San Francisco Bay areas has been intensified by Standard Oil Co. of California in the delta region of the upper bay.

Standard now is drilling three exploratory wells and preparing for a fourth. Two are located just northwest of the city of Pittsburg and a third is seven miles from Stockton. A fourth is nearly ready on the outskirts of that city.

The Pittsburg wells are significant because of their proximity to the large gas transmission line which delivers gas to domestic and industrial consumers of Contra Costa and Alameda counties.

While the supply of natural gas presently is sufficient to meet peak requirements of customers dependent solely on gas for fuel, an additional supply could readily be substituted for certain quantities of fuel oil being burned in large industrial plants, thus releasing the fuel oil for the demands of the armed forces.

■ ■

Gas Supplies All Heat In New Tinning Dept.

Hearing that a Brooklyn war plant was interested in operating a complete tinning department, Industrial Sales Engineer Lloyd Hunziker of The Brooklyn Union Gas Co. interviewed the customer and in less than 30 days the department was in operation with gas supplying all heat required. Details of design were worked out, a 6-in. gas service 330 ft. long was installed, and the equipment—consisting of a tinning tank, two beef tallow tanks and three hot cleaning tanks, all with heat controls—was installed. The load is estimated at 2,600,000 cu. ft. a year.

The customer is the Hercules Food Service Equipment, Inc., which makes a large number of critical items for the navy and maritime commission. The particular job for which the tinning equipment was needed is in coating muffin tins which ships' cooks must have to make the muffins for men at sea.

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Charter Oak Firm Sold To Reynolds Co.

The Charter Oak Stove & Range Co., St. Louis, maker of Charter Oak heating stoves, has been sold to the Reynolds Metal Co., Louisville, second largest aluminum company in the United States. The Reynolds firm acquired the 7000 shares of Charter Oak stock for $287,000.

For the present the Charter Oak plant will continue to make coal and wood stoves and will begin manufacture of cotton insulating materials in its 250,000 sq. ft. of factory space.

Charter Oak stoves have been made for nearly 96 years. The present concern was incorporated in 1886.

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Oklahoma Allowables Set

Allowed natural gas production for November in the Charlson zone of the Chickasha field of Grady County and the Medrano zone of the West Cement field, of Caddo County, was set by the Oklahoma Corporation Commission at a hearing Oct. 28.

Production from the Chickasha field was set at 2,373,000,000 cu. ft., for the month, or 79,100,000 cu. ft. daily. Monthly requirements as asked by the purchasers in that field were: Little Nick Oil Co., 100,000,000 cu. ft.; Lone Star Gas Co., 535,000,000 cu. ft.; Oklahoma Natural Gas Co., 1,500,000,000 cu. ft.; and Consolidated Gas Utilities Co., 238,000,000 cu. ft.

Total allocation for November from the Medrano zone of the West Cement field was set at 23,626,000 cu. ft. daily for wells producing gas only.

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No. Indiana Public Service Buys La Porte Company

The Indiana public service commission has approved the purchase of the La Porte (Ind.) Gas and Electric Co. for $2,500,000 by the Northern Indiana Public Service Co., from the United Light and Power Co.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933

Of *GAS*, published monthly at Los Angeles, California, for October 1, 1943.

State of California, County of Los Angeles—ss.

Before me, a notary public in and for the State and county aforesaid, personally appeared Jay Jenkins, who, having been duly sworn according to law, deposes and says that he is the publisher of the *GAS* and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher, Jay Jenkins, 1709 W. 8th St., Los Angeles 14, Calif.

Managing editor, Arthur Rohman, 1709 W. 8th St., Los Angeles 14, Calif.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

Western Business Papers, Inc., 1709 West Eighth St., Los Angeles 14, California.
Jay E. Jenkins, Los Angeles, Calif.
James E. Jenkins, Los Angeles, Calif.
Craig Espy, Dallas, Texas.
George H. Finley, Santa Barbara, Calif.
Arthur Rohman, Los Angeles, Calif.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragaphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is..... .....(This information is required from daily publications only.)

JAY JENKINS,
Publisher.

Sworn to and subscribed before me this 24th day of September, 1943.

(Seal) SUSAN McCONNELL

(My commission expires June 4, 1947.)